

All About the Baby



The modern mother thinks of her child in relation to his future health and happiness.

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ALL ABOUT *the* BABY

THE BEGINNINGS OF HUMAN LIFE
WITH EARLY NEEDS

VOLUME TWO
THE CHRISTIAN HOME SERIES
IN FIVE VOLUMES

By

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PACIFIC PRESS PUBLISHING ASSOCIATION
Mountain View, California

Portland, Oregon

Omaha, Nebraska

Cristobal, Canal Zone

Brookfield, Illinois (foreign-language publications only)

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*To the babies who are, to the babies who
have been, and to those who are to be,
this book is affectionately dedicated. . .*

A Preface

THE most important thing in the world is the baby, for he is the unit out of which the world is made. He is the man or the woman in the making, and upon the success or failure of this making depends the sum total of joy or sorrow, happiness or woe in this sphere of ours.

We have all been babies, and all feel sure that if we could go back and have a hand in our upbringing we would have lived happier and more successful lives. And any one of us, married or single, can very easily see mistakes others make in the care of their children.

That mistakes, serious ones, are made in the rearing of every child, there can be no question. These mistakes are not always made by parents. Grandparents, uncles, aunts, family friends, casual acquaintances, all have a hand in the errors that spoil the child. Perhaps if we could get away from the idea that the bringing up of children is a task that fathers and mothers—principally mothers—must carry alone, and all realize the importance of more universal intelligence as regards child needs and care, there might be a coöperation with mother that would lessen her anxiety, lighten her labors, and make possible the attainment of her ends in the final production of men and women, not only more to our liking but nearer the standard of individual possibilities and world needs.

The story of life, of the child's background, of his possibilities, his physical, nervous, and emotional requirements should be of greatest interest to every one who has any memory of his own childhood. It might help him to understand himself more fully, to realize more clearly whence he came, why he is what he is, and whither he may be going. The study of the baby and something of his psychology should be of interest to every one who ever by contact, word, or look influences a little child.

Could we in any family have intelligent harmonious action in regard to that baby who is so adorable and in whom we are all so happily interested, might we not rear a type of child that

would be not only a joy in babyhood but a blessing in after years to his family and to his fellow men?

Let no one say, "It is nothing to me. I have no children." But let every one become intelligent as to babyhood—that state in life wherein lies the greatest of possibilities. And thus, by co-operation, change mother's task from one that at times seems almost impossible and hopeless to one of bright outlook and assured success.

So if you have a baby and want the practical details of its care, or if any of your relatives have babies, or if you like children and are in the habit of paying attention to them, or if you know anything about your forbears, or if you know nothing at all about them, or if you have any memory of your own childhood, or if you are interested in the wonderful story of heredity and want a simple explanation of its known principles, or if you are interested in world needs and world progress, or if your interests are along the line of sociology, education, psychology, you may feel that it is worth while to read about the beginning of human life as outlined in this book, "All About the Baby."

THE PUBLISHERS.

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Plan

AS THE second volume in the series on home making and child training the author presents this book, not only as a delineation of baby's needs but also as a study of heredity and of the beginnings of human life. The second book being now ready, we look forward into the next few months for the appearance of the remaining three volumes that will make the set complete, as follows:

- Vol. I--Makers of the Home (General; for youth, the newly married, and parents).
- Vol. II--All About the Baby (A story of human beginnings and life up to the age of three years).
- Vol. III--Through Early Childhood (The Care and Education of the Child from three to nine).
- Vol. IV--Growing Boys and Girls (Pre-adolescence—years ten to thirteen).
- Vol. V--The Days of Youth (Adolescence—years fourteen to twenty).

"All About the Baby" is written not only for the instruction of fathers and mothers, but also for all those who are interested in the home as the cultural unit of society and who realize the importance of all that has to do with the background of the child and his surroundings during his earliest months and years.

Not all will read the book for the same reason. There are practical details for the mother who wishes to know how best to care for her baby; there are phases of child training, which should be carefully considered by the father; there are discussions of the laws of heredity and of human relationships, which should be studied not only by every parent and home maker but by every young man and woman looking into the future with the thought of marriage; and the general human interest of the questions discussed throughout the book is such that there are few who may not find something in it applicable to their own lives and experience.

The Family Tree—Its Beginnings

"Where did you come from, baby dear?
Out of the Everywhere into the here!"

Where Did Baby Come From? Yes, where did baby come from? His beginning was in the union of two cells, so small that they could be seen only with the aid of the microscope; yet here he is, complete in every organ and function, with eyes like mother's, nose like grandpa's, and mouth just like dad's. And, as he grows, he gets more and more like Grandfather Brown, develops dyspepsia just like Uncle Art, and a streak of shrewdness in his disposition much like Great-grandfather Ellis, who always struck such a sharp deal in a trade. He is altogether a composite of traits passed down to him from his forebears—inherited, we say. If he is good, he gets it from his ma. If he is bad, he is mostly like his dad. If he is brilliant in mathematics, so was pa at school. If he is dumb in grammar, so was Uncle Phil.

And where did Johnny get that temper? Why, that comes from grandfather on his mother's side. A little tendency to deceive? Yes, there is that great-uncle—the black sheep of the family, with a shady record—evidently he has a bit of him in his make-up. It is all granted that whatever we have or are is inherited from those who have gone before us. Is it all a superstition, as we are finding so many things to be? or is it a scientific truth that, through two tiny cells, traits varied and unnumbered can be passed on through the generations?

Clever things are said now and again, and are passed on to us for our pondering. Here is one credited to Oliver Wendell Holmes, and, no doubt, is familiar to the reader: "Every man is an omnibus in which his ancestors ride. Every now and then one of them sticks his head out of the window and disgraces us."

What about this complex thing called heredity? How is it that in the two cells, which merged into one begin a new life, there can be the predestination of scores of tendencies and ancestral characteristics, which, faithfully transmitted, show forth

in the offspring and exhibit themselves in numerous ways as the years go by? There are so many of these characteristics and such an endless number of character combinations, that no two persons were ever exactly alike, the closest to an exception being in the case of identical twins—when that which would have been one individual divided to make two, one such twin being in a way a half of the other one.¹ Is there any science or system to all this?

Every individual has had his beginning in two cells, which, uniting, made one cell—a female, or egg, cell called an *ovum*, and a male, or sperm, cell called a *spermatozoön*. These are the reproductive cells, and are known as germ cells. Amalgamated, they form the cell that is the beginning of a new individual. The unit of all plant and animal life is the *cell*. Plant and animal tissue is made up of cells,

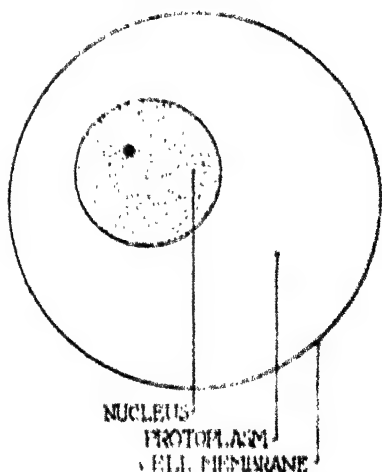


FIG. 1
DIAGRAM OF A TYPICAL CELL.

just as every brick house is made up of bricks or every piece of cloth is made up of strands of thread. In the finished product, there are cells innumerable, but the beginning of all was in the one cell made up of the two—ovum and pollen (in the plant), or ovum and spermatozoön (in the animal).

Let us consider a cell for a moment (see Fig. 1)—so tiny that it cannot be seen with the naked eye, and yet such possibilities of life bound up within it. Cells may be and are of many different shapes, but the simplest form is round. A limiting membrane called the *cell membrane* surrounds it. The body of the cell is made up of a jellylike substance called *protoplasm*, sometimes spoken of as the cell plasm. In the cen-

¹Recently a case study of identical twins was reported, in only one of whom high blood pressure and heart disease was present.—*Archives Internal Medicine*, December, 1943.

ter, or perhaps to one side of the center, is a small area more dense than the rest, which again is most often round but may be of any shape. This is called the *nucleus*. This nucleus is the vital part of the cell. It is the controlling, active substance.

The human body, then, starts as one cell. Roughly estimated, the full-grown body is composed of about one hundred million million cells. These vary a few million million more or less, depending on the size of the individual.

An Interesting Story. The story of the human body from its beginning to its end is of intense interest. Its history begins with the very inception of the new life, and has been divided by those who have studied it into definite periods. Three of these are before birth. The *first period* is that of *the egg*, and lasts two weeks. This egg in the human averages less than one one-hundredth of an inch in diameter, and cannot be seen clearly without the aid of a microscope. In this tiny egg are all the characteristics that will be inherited by the being developing from it. This egg cell divides exactly in half, making two new cells, one half of its nucleus going to form the nucleus of one new cell, and the other half to form the nucleus of the other. The first pair of cells look exactly alike. Each one of the pair soon divides again, and the result is four like cells; then again, and the result is eight. (See Fig. 2.)

All the early cells seem to be the same; but as the cells keep dividing and the total number increases, the size and form and appearance of resulting cells gradually vary, and there finally come to be great differences.

The enormous number of cells resulting from the many divisions soon form a mass that is shaped somewhat like a blackberry or a mulberry; but this mass of cells does not enter entirely into the formation of the new body itself.

At the end of two weeks, on one side of this mass, which is now about one fourth the size of a grain of wheat, some of the cells group in such a way as to form the beginning of a specialized portion, and this specialized portion is that which is going to be the new human being. The other cells of the mulberrylike mass surround and protect and feed the new being, just as the greater part of the contents of a hen's egg serves as nourishment

for the developing chick. The special group of cells that is forming the new body is called the embryo, and the *second period*, or the *period of the embryo*, has now begun. During this second

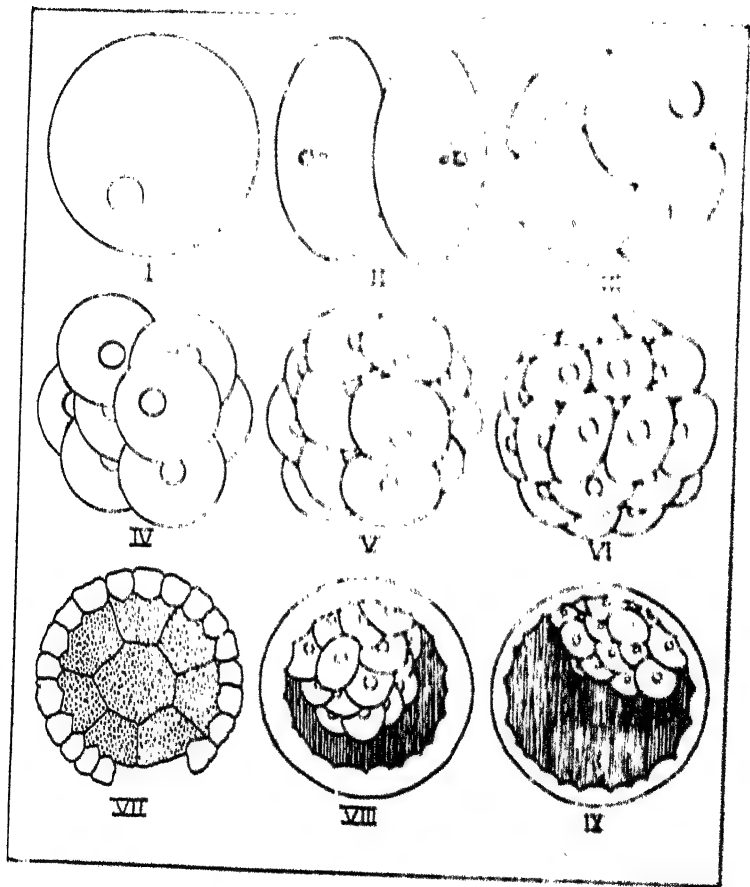


Fig. 2. DIVISION OF OVUM

Diagrammatic illustration of division of ovum into many cells, showing the grouping on one side within which the embryo is formed. (Change in size not shown.)

I. Fertilized egg cell

II. First division

III. Second division

IV, V, VI. Further divisions, forming mulberry stage

VII, VIII, IX. Grouping on one side to form embryo

period, the organs of the body begin to be formed. The cells of the embryo keep on rapidly dividing, but now the divisions begin to result in many *different kinds* of cells, as nerve cells, bone cells, muscle cells, and many others, each cell being specialized

for its particular work. The embryo, however, does not yet resemble the human body. In fact, the embryos of all the higher animals look much alike; even that of the chicken in its beginnings looks much like the human body in its earliest stages. When it is about fifty days old, the human embryo begins to look a little like a human being.

The *third period* begins at the end of the third month of prenatal life. This is called the *period of the fetus*. (See Fig. 3.) The specialization of cells and the formation of organs continue on through this third period until a time comes when the new body can perform its functions sufficiently to live apart from its mother's body; and the



Fig. 3. HUMAN FETUS

- a. Amniotic sac
- b. Umbilical cord
- c. Placenta

child is born. Oh, wonderful, mysterious process, so accurately and unerringly carried on in its complicated unfolding!

Periods of Human Life. The periods of human life preceding and following birth have been summarized as follows:

1. Period of the egg—the first two weeks.
2. Period of the embryo—to the end of the third month.
3. Period of the fetus—to the time of birth.
4. Period of the newborn—the first two weeks after birth.

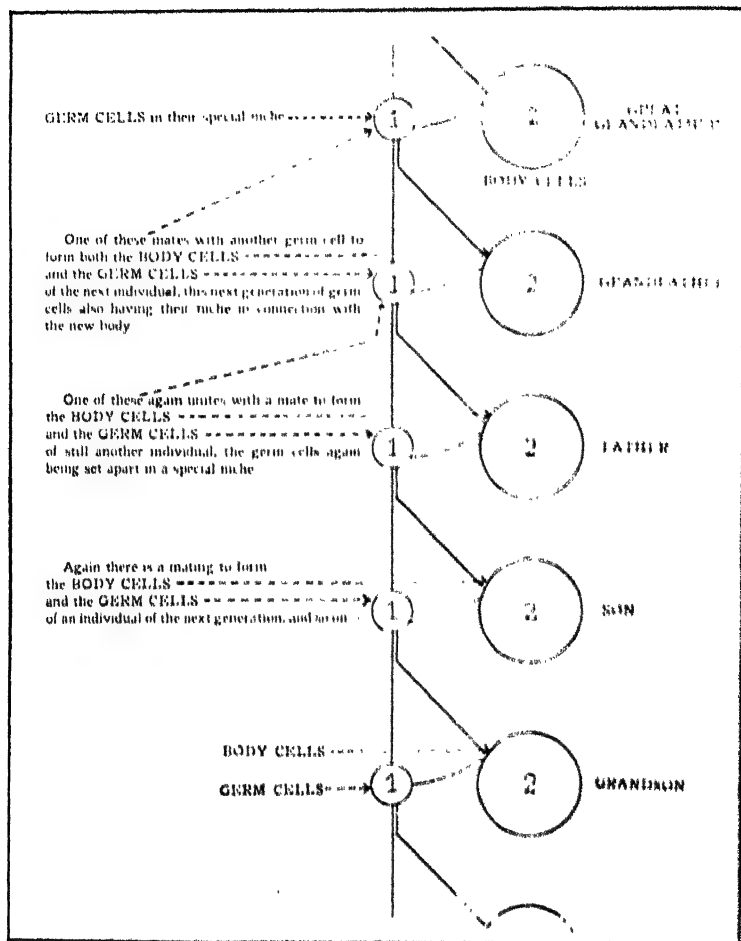


Fig. 4. FAMILY LINE

Illustrating perpetuity of germ cells in the stream of heredity

There are two kinds of cells in each individual:

1. Germ cells, which form a never-dying strain solely for reproducing the species. Note the direct line. These cells are unaffected by acquired changes in body cells.
2. Body cells, the specialized cells forming the tissues of the body, but never perpetuated or reproduced. The next individual always comes from the germ cell, and germ cells come direct from the undifferentiated cells of the ovum. The body cells all die, but the germ cells are passed on—the stream never dying out as long as the race continues.

5. Period of infancy—from two weeks to one year.
6. Childhood—infancy to fourteen years.
7. Adolescence—fourteen to full maturity (twenty-five to thirty years.)
8. Maturity, or adulthood.
9. Old age.

The Climax of the Story. Now for a most interesting part of the tale. Just before the dividing cells of the new body begin to specialize, while they are still all alike, some of them are set aside for a special purpose. These never become specialized to make bone, muscle, nerve, or various tissues, as do the other cells; but they are put away, so to speak, and kept in a specially prepared place against that future time in years to come when this body that is now being formed will reproduce itself. These unchanged cells, separated from the original ones before specialization begins to take place, are the *germ cells*—ova or sperm cells, whichever the case may be—that are to repose in their special niche until such time as they may be considered ready for duty in the continuation of the stream of heredity.

It is interesting to note that these germ cells *are like the beginning body cells*, and are set apart in this primeval state in order that the ancestral stream may be passed on in an uninterrupted way from generation to generation. And, naturally, the beginning body cells were like the amalgamated germ cells of the two parent bodies from which they sprang, which, in their unjoined state, were like the original body cells from which they were set apart, and so on back through the generations. Or, to look ahead, some one or more of these germ cells we have just spoken of will, in the later life of the individual, when mating takes place, unite with a complementary germ cell. The segmentation of these two form the beginning of a body of another generation, the dividing cells of which will again set aside cells that are a replica of the original; these, in their turn, to repeat the process at maturity in the continuation of reproduction, a never-ending stream of familial characteristics thus being passed on in the racial building. (See Fig. 4.)

Food for Thought. Surely a young man or a young woman contemplating matrimony would do well to consider the family

background of the one under consideration as a possible mate. If every young person would but stop to meditate upon the fact that the seal of his marriage, the acme of his earthly joy, his greatest contribution to mankind, may be in the child that is born as a result of this marriage, he would hold the reins of his emotion until such time as it might settle upon one who could bring to his child the heritage, at least in part, that he might desire for it. Marry for love, yes; but guard well the power of love. Control it; be not entirely controlled by it.

There is just one thing that can offset the wrong sort of heredity, and that is a sober, serious, sensible recognition on the part of the individual as to his hereditary shortcomings. This, with right ideals and determination to strengthen weak points, can do much to neutralize the shortcomings of family tendencies.¹

¹ "As I read step by step the marvelous story of the creation of a new human life, I felt as if I sat in the darkened projection room of God, watching upon the glowing screen the tracing of His divine finger in the ultimate mystery. Two tiny cells that hold enwrapped within their infinitesimal space the wondrous mechanism of a human body, the destiny of a human soul, are, by the working of a divine law, brought together. They meet, they merge into each other, there is one cell. A new life has begun. A little round, jellylike cell, too small to be seen by the human eye, but impregnated now with the power to grow. It moves, it folds, it breaks into two cells, and they into more, and more, and more; subdividing, multiplying, clinging together, a little mass of rounded cells, all alike.

"And then, wondrous vision! For no cause that can be discovered, these cells, still multiplying, growing ever greater in mass, begin to diverge in form and function, preparing to take up the duties and their assigned posts in human frame and life. What makes the change in them? We do not know, we cannot tell, except that, as it were in this sanctuary of His creative power, God stoops down and whispers to them, saying to these, 'You be the brain;' to those, 'You be the heart;' to others, 'Make the eye, the ear, the tongue, the hand, the bone and muscle and nerve, the blood and the channels through which it flows.' And yet to some God says, 'You special cells remain unchanged, like your parent cells, that you may carry on to generations yet unthought of the looks and thought and frame and power of these progenitors. You shall be stored in the most holy place of the sanctuary of the body for the perpetuation of My image in the children of men.'"—A. W. Spalding.

The Family Tree—Its Perpetuation

Body Development. Let us continue our interesting story of body development. We have learned that as the early body cells are dividing, a few of them are set aside, unchanged, for a special purpose, and that these are called germ cells. Now what happens to these germ cells?

In their separate niche, they continue for a time to divide just like the body cells about them; but, unlike the rest of the body cells, they do not change. They remain just like the original cell. While the body cells all around them are becoming specialized to form different organs and tissues, the germ cells, even though they multiply, do not change in any way.

Just how do cells divide? Let us study this for a moment. It will help us to understand heredity better if we know a little about the remarkable process of cell division.

We have already described the cell as having a nucleus, this nucleus being the living, active part. The nucleus is made up largely of a substance called *chromatin*, so called because it can be stained with a drop of coloring matter while the material surrounding it remains colorless. This chromatin is that part of the cell that has to do with heredity; and in every body cell there is chromatin, which has come, one half from the paternal germ cell and one half from the maternal germ cell. In other words, there are united in every one of the millions of body cells characteristics from each parent—the chromatin of each one of these cells having its double influence upon the general make-up of the individual, both physical and mental.

Chromosomes. When ordinary cell division is on, the chromatin of the cell arranges itself into rodlike bodies called *chromosomes*. These chromosomes, then, are the chromatin material as it appears when lined up for division. These chromosomes have been said to be the most wonderful things in the world; and, as we study them and their activity, we must agree that we can imagine nothing more marvelous. (See Fig. 5.)

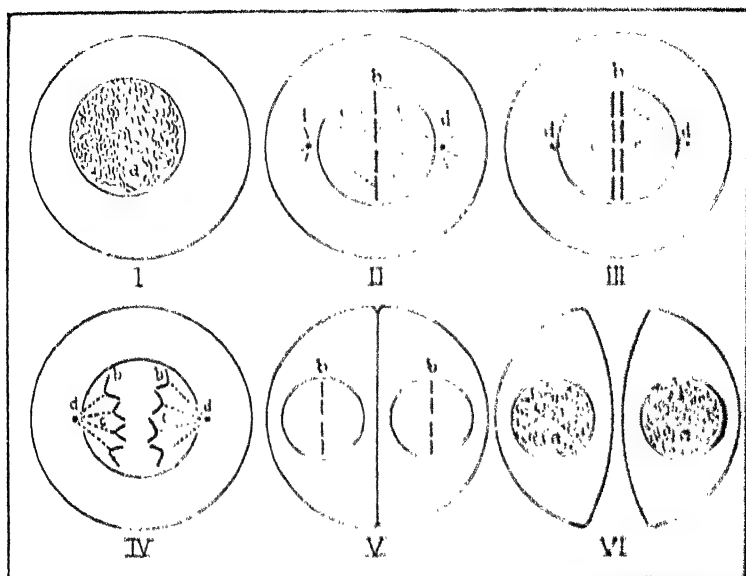


Fig. 5

Diagram of ordinary cell division showing division of chromosomes. Although there are 48 chromosomes in each human cell only 4 are shown here.

a. Chromatin
b. Chromosomes

c. Lines of attraction
d. Centres of attraction

- I. Cell in resting stage. Chromatin dispersed.
- II. Beginning of process, chromatin gathered into rods called chromosomes.
- III. Chromosomes split lengthwise.
- IV. Chromosomes travel toward each end of cell.
- V. Cell splits. Chromosomes gathered into new formed nucleus.
- VI. Chromatin disperses. Cell divides.

In these chromosomes are the factors for all the family characteristics that have been handed down from both parents, as tallness or shortness; brown eyes or blue; straight hair or curly; tendencies to weakness or strength, to caution or recklessness, to moral integrity or instability. Far beyond us is it even to think of naming all the inherited traits that go to make up the individuality of a human being, but all the innumerable factors are contained in the chromosomes of *every one* of the millions of body cells, and all influence the ultimate make-up of the individual. Nothing in nature can be more wonderful than this in its infinite complexity.

There are always the same number of chromosomes in the cells of individuals of the same species; for example, the ox and the onion (one an animal, the other a plant) each has sixteen chromosomes in every cell. The monkey has fifty-four. In the human body there are forty-eight—twenty-four from the father and twenty-four from the mother.

Genes, or Determiners. Each chromosome contains an unthinkable number of familial factors. These hereditary factors entering into the formation of the chromosomes are often spoken of as *genes*, or *determiners*.

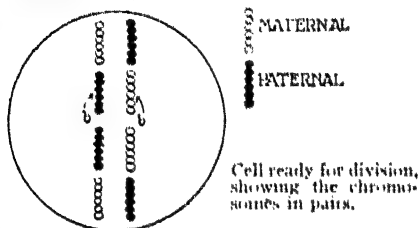
When the body cells are in the process of dividing, the division takes place in something like the following fashion: The rodlike chromosomes all gather to the middle of the cell, and there they split from end to end, each into two equal parts. The cell membrane drawing in from each side between these two groups of divided chromosomes finally meets, and the division is complete. The half chromosomes grow to full size, and the one cell has become two cells. The chromosomes again scatter into chromatin threads, and there is a quiescent stage until again the process is repeated. Chromosomes form, line up, and again divide. Remember, please, that these changes may and do occur in very rapid succession under certain conditions of growth and development. (See Figs. 5, 6.)

But always the genes, or factors, or determiners, from each parent maintain their places in the chromosomes of each new cell. The cells resulting from division are always like the cell from which each came, as far as chromosomes and genes are concerned.

Marrying Cells. But there is added to the story of the germ cells and their dividings an interesting sequel. In their special niche, they divide for a time as do the body cells. In the female, at puberty there are about thirty-five thousand ova in each ovary, but at this time a different sort of division begins to take place. This is where the interesting part of the story comes in.

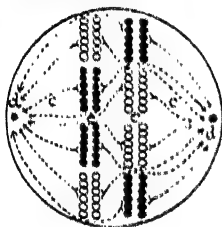
Chromatin material forms into chromosomes just as in the regular dividing process; but, instead of the chromosomes each splitting into two equal parts, they at once separate into two equal groups. One of these groups is then thrown out of the cell,

Diagram showing the behavior of the chromosomes in cell division, comparing the division of ordinary body cells with the reduction division which takes place once in the life of a germ cell.

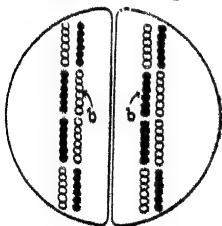


- b. Chromosomes
c. Lines of attraction
d. Centers of attraction

The drawings below illustrate the chromosomes dividing in ordinary cell division. This takes place in all body cells and in the earlier divisions of germ cells.

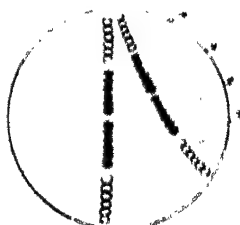


Chromosomes split lengthwise.

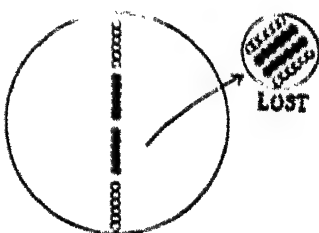


Result—two complete cells.

The drawings below illustrate the chromosomes in reduction division. This takes place in the final preparation of a germ cell for mating.



Notice that only one chromosome of any pair is thrown out.



Result—a marrying cell.

Fig. 6

In the figure at the top of the page the chromosomes are arranged in pairs, each member of a pair of chromosomes influencing the same group of hereditary factors. The chromosomes are made up of genes, each gene controlling a specific hereditary factor, and, since the chromosomes are paired, the genes are also paired.

In the figures on the left, each chromosome splits lengthwise, the resulting halves traveling to opposite sides of cell. The cell then splits, forming two cells, each containing the same number of chromosomes as the original cell.

In the figures on the right, the chromosomes do not divide, but one half of them, one from each pair, are thrown out of the cell and lost. The resulting cell is a marrying cell containing one half the original number of chromosomes.

Note: The human cell contains 48 chromosomes; only 8 are shown here. These figures show only nuclear changes; the entire cell is not represented here.

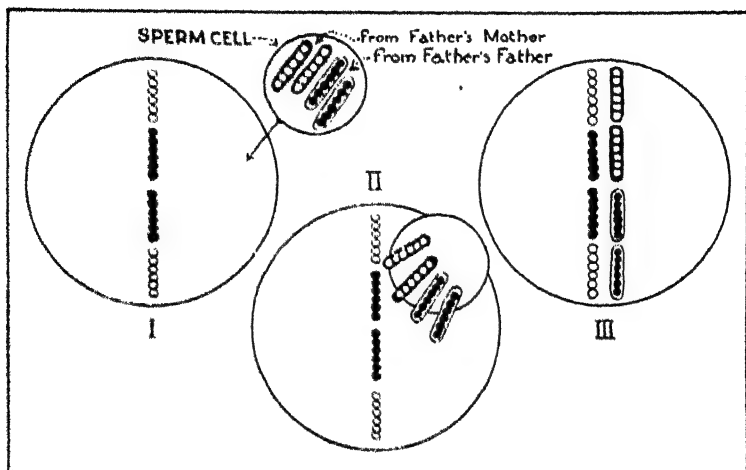


Fig. 7. FERTILIZATION

- I. Egg cell from mother now a marrying cell, with half number of chromosomes and sperm cell (male), also a marrying cell, with half number of chromosomes, about to unite.
 - II. Union of the two marrying cells.
 - III. Complete new cell from which the new organism develops. The chromosome pairs are restored, one of each pair from the father and one from the mother.
- Note: These figures show only nuclear changes; the entire cell is not represented.

and is lost. The resulting cell has only twenty-four chromosomes instead of forty-eight. Each remaining cell is really only a half cell, and needs a complementary cell with like twenty-four chromosomes to make it complete. A similar process of preparation also takes place in the male germ cells, leaving them also with one half the required number of chromosomes. Union with a complementary cell to make the complete whole with a resulting cell having the full forty-eight chromosomes is what occurs when fertilization takes place and a new being is originated. (See Figs. 6, 7.) What we have described is in principle what takes place in both ovum and sperm, but there are, of course, technical details more complicated than we can attempt to describe here.

So you see the germ cell, whether egg or sperm, whether ovum or spermatozoön, must give up half of itself and find its mate, which has also sacrificed one half of itself, before it can ever be anything but a germ cell.

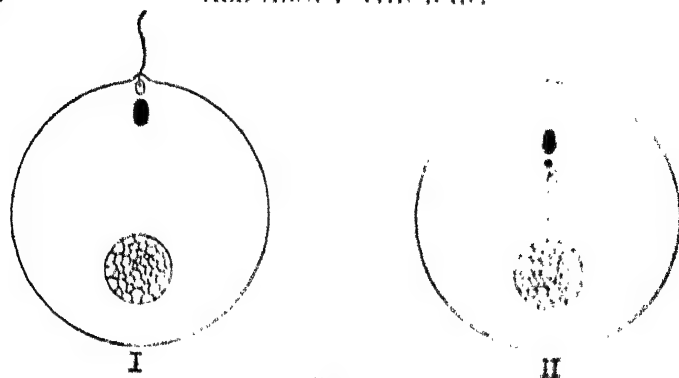


Fig. 7a

Diagram showing the entrance of a spermatozoon into an ovum.

- I. The sperm cell is entering the ovum.
- II. The tail has disappeared, and the head, with its nuclear material, is moving toward the nucleus of the ovum, where the union, as explained on page 72, will take place. See also page 72.

These germ cells, which in the beginning were simply forty-eight chromosome body cells set aside for a special purpose, now, by each dividing and becoming twenty-four chromosome cells, have put themselves in a position where they are ready for mating, and are now called "marrying cells." The division that makes them such is called "*reduction division*." (See Fig. 7.)

More About Reduction Division. This, then, is a special division preparatory to the mating, or fertilization, of germ cells. You can see that this reduction division is quite different from the regular division that has to do with the body's development and growth. And it is plain that while ordinary division can take place many times, reduction division occurs in any given cell but once.

In the marrying cells resulting from the reduction divisions, it is evident that each germ cell has lost one half of its genes, or hereditary determiners,—this last half to be made up by genes from another family strain. And as, even in large families, only a few fertilizations occur compared with the large number of germ-cell possibilities, it is plain that many characteristics of the family are lost entirely. So, of course, there is all the more reason why no one can guess just what baby is going to be like or what his natural tendencies will be.

The Family Tree—Its Fruit: Blue Eyes or Brown

Hereditary Factors in Body Cells. We will continue this study a little further. We have seen that in the chromosomes of each body cell are all the factors that have come down from the father and the mother—one half from each parent. In every complete set of chromosomes as they are found in the body cells and in the germ cells before their reduction division, there is a gene or genes influencing every possible hereditary characteristic. These genes are always in pairs—one of the pair from the paternal side, one from the maternal. The genes of any pair may be much alike or they may be very unlike. And it is with opposite characteristics, of course, that it has been possible to make the observations. Take, for example, a pair of genes that have to do with height. If the parents are both short, the evidence is that the height genes in the body cells of their offspring will carry shortness, and their influence will be to make their offspring short. Likewise, if both father and mother are tall, the height genes in the body cells of their child will carry tallness, and the child will tend to develop into a tall individual.

Dominant and Recessive Characteristics. But if one of the parents is tall and the other short, a child born of them may carry in each one of his body cells a pair of height genes—one of which will have an influence for tallness, the other an influence for shortness. Tallness, we will say, is a positive, or *dominant*, trait, and thus would have a stronger influence than shortness, which is a negative, or *recessive*, trait. This being the case, the child will tend to grow tall in spite of his short genes.

Or there may be paired with a gene for brownness of eye from one side a gene for blueness of eye from the other; with the one for natural strength of will there may be one for weakness; with the gene carrying natural nerve poise, one carrying natural nerve imbalance, and on through the countless unfathomable list. Experiments on plants and animals go to show that so far as any

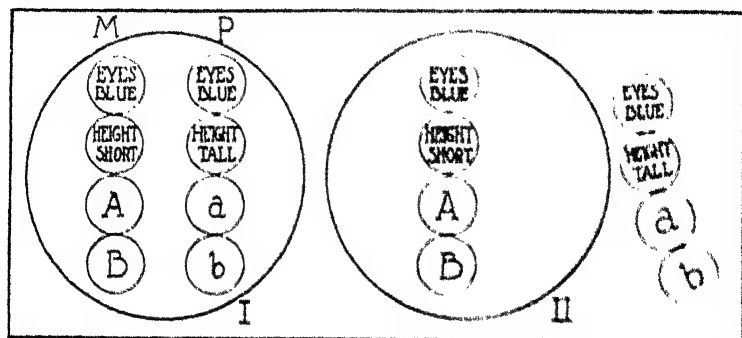


Fig. 8

- Diagram illustrating paired factors, controlled by the genes in chromosomes. One gene of a pair carries hereditary influences from the mother, and the other from the father.
- I. Germ cell is shown before reduction division, carrying pairs of genes. M, maternal; P, paternal; A a, B b, represent any of numerous other family characteristics.
 - II. Reduction Division: Marrying cells, one member of each pair of which is discarded so that only one member is passed on to offspring from one parent.

trait in father or mother is dominant, it will tend to overshadow the less dominant, or more recessive, one from the other side.

Only One of a Kind. One very important and interesting thing that we should note at this point is that no two of any pair of genes traveling together (one maternal, one paternal) in the body cells are ever found in the same germ cell after it has been reduced by reduction division (see previous chapter) and has become a marrying cell. In other words, no person ever passes on to any one of his reduced germ cells both a gene he has received from his mother and its partner gene received from his father. He may bequeath the mother gene or the father gene—never both. To illustrate: A person carrying a pair of genes in each of his body cells, one representing tallness and one representing shortness (having got one from his father and one from his mother), will never have in any one of his reduced germ cells both of these height genes. There will be one for tallness *or* one for shortness, but never both. (See Fig. 8.) If both of this individual's height genes are of the same kind, either short or tall, then as they separate, they will each one carry shortness or each one carry tallness, as the case may be, into the cell of which each one becomes a part. If the height genes differ, each will

carry its particular trait into the new cell, but the dominant quality will tend to overshadow the recessive one.

When the germ cells undergo this process of reduction division, the chromosomes separate apparently at random; yet when the division has been accomplished, it is found that of every pair,

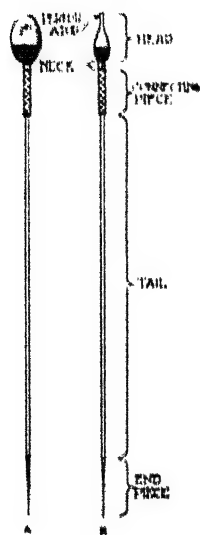


Fig. 4

Diagrammatic illustration of human spermatozoon.

A. Surface view
B. Profile view

only one gene is left in the marrying cell. It matters not, apparently, into which half of the dividing nucleus the chromosome bearing a particular gene or set of genes may go, just so it never goes in the same direction with the chromosome carrying the members pairing with its own. It is evident that both genes of a pair cannot be carried in the same chromosome, else it would not be possible for them to separate entirely in the reduction division of the germ cell. So it is not a random separation after all, but decidedly purposeful, each chromosome being guided into that portion of the dividing nucleus that will separate it from the chromosome bearing characteristics pairing with its own. And as any marrying cell contains only one of each of the many pairs of genes that are in the original germ cell, it is evident that in the fertilization of any one of these marrying cells only half of the original genes are carried on to the individual developing from this fertilized germ cell. (See again Fig. 6.)

"Nothing in all nature is more thrilling than to watch these life processes under the microscope, or to study their outcome in the future offspring. The way these chromosomes behave in the cells, the marvelous and, to us, still mysterious way in which they move with all the mechanical precision of the planets; the way they divide and grow and sort themselves out in Mendelian proportions and thus distribute the various characteristics of the ancestry among the descendants—all carried on as though they were endowed with some inner intelligence or else were under the guidance of some supreme will, acting with a

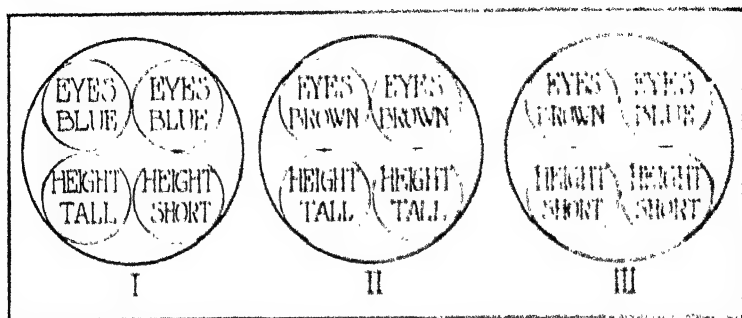


Fig. 10. DOMINANCE

Various arrangements of genes in body cells or unisexual germ cell. (Though the genes of a pair carry opposite characteristics, one is always dominant, and the organism exhibits the dominant trait.)

- I. Blue eyes. Tall individual - providing tallness is the dominant trait
- II. Brown eyes. Tall individual.
- III. Brown eyes (brown dominant), Short individual.

vast 'purpose' in view-- all this to my mind is the most inspiring and exciting series of events which it has ever been the privilege of the human mind to contemplate.

"Our poets write of stars, of ocean storms, of waterfalls, sunsets, wars, social inventions, and government. But to my mind, vastly more inspiring and wonderful is the mysterious way in which these little particles of living materials move, their wonders to perform. For behind all wars and governments and civilizations is this living process itself which determines and conditions the whole drama of the life of man.

"Each one of these tiny particles bears its own particular and indivisible burden of life as though it had been divinely appointed as the messenger of some master builder who had some purpose of his own hidden beyond human ken."--*"The Fruit of the Family Tree," Wiggam.*

Dominance and Recessiveness. But to continue, let us discuss a little further this question of dominant and recessive factors. A factor is dominant, which, when united with its opposite trait, tends to dominate or overshadow it. We may say that the dominant factor is the positive one. The recessive trait is that which tends to recede from view when united in the body cells with positive, or dominant, characteristics. We may speak

of the recessive factor as the negative one. Take, for example, tallness and shortness, the person having received in his beginning as a fertilized germ cell, a factor for tallness from his mother and a factor for shortness from his father. As we have said, he has these two factors, or determiners, or genes, present in *every one* of his many millions of body cells (but in different chromosomes), and each has its influence on his development; but supposing again that tallness is a dominant trait, it will tend to dominate in this individual over the factor for shortness, and the person will be tall, at least comparatively so, for shortness, as a recessive trait, will have receded from view. But when it comes to this tall person's germ cells, one half will carry a gene for tallness and one half a gene for shortness, so he will be just as likely to pass on to his offspring the characteristic of shortness as that of tallness. If one of his marrying cells carrying shortness meets and unites with a marrying cell carrying a gene for tallness, his child will again be tall, not because of his tallness but because of the tallness with which he mated. Of course, it goes without saying that if a marrying cell of his carrying tallness mates with a cell carrying a tall gene, the result will be a tall individual. But if one of his germ cells carrying tallness meets a cell carrying shortness, his child will tend once more to be tall, but this time as a result of *his* tallness, not that of his mate's or his mate's ancestral tallness.

To summarize:

Tallness plus tallness equals tallness;
Shortness plus shortness equals shortness; but
Tallness plus shortness equals tallness; and
Shortness plus tallness equals tallness,

'because tallness is the dominant factor, and shortness recedes from view, or is the recessive factor. (See Figs. 10, 11, 12.)

Of course, this cannot all be demonstrated so clearly in human beings, because of the many things aside from any one gene that probably influence growth and development. There may be many genes that have to do with one's final height, and no doubt other factors that enter into it. However, on the basis of this theory one can make many interesting observations.

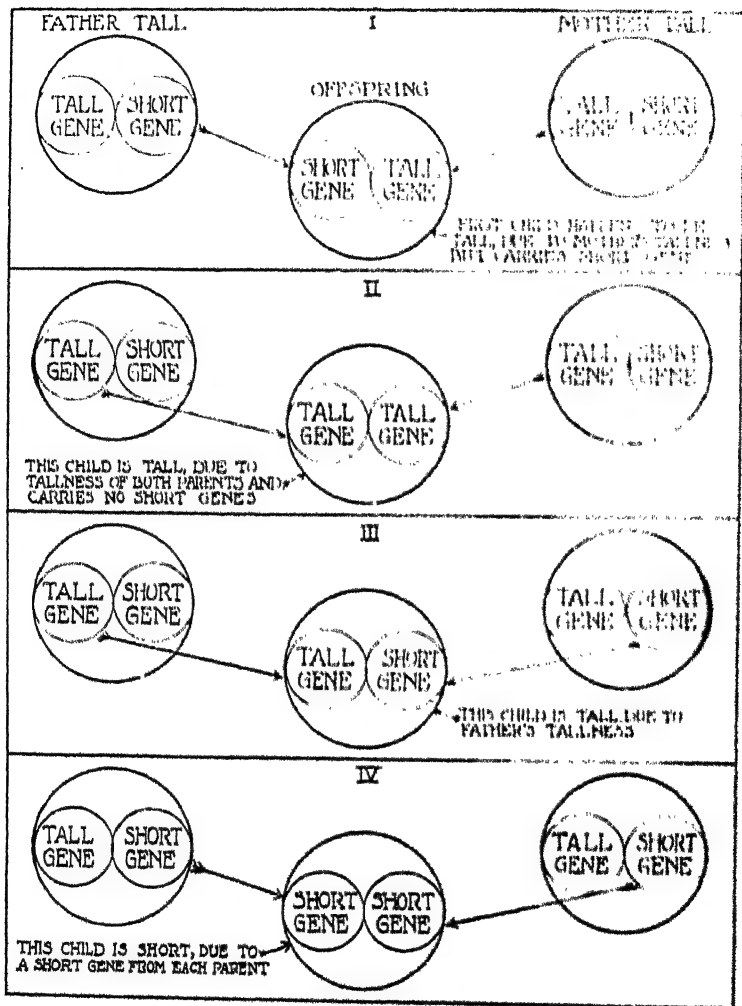


Fig. 11

Diagram showing the various hereditary combinations and results in the offspring of two tall parents, providing each carries recessive characteristics in one of the genes controlling height. (Remember that tallness is supposed to be a dominant factor.) Note: Large circles represent cells before reduction division. Small circles represent genes contained by pairs in each body cell and unreduced germ cell. Reduction division discards one gene and keeps the other in the marrying cell.

- I. This child happens to be tall, due to mother's tallness, but carries short genes.
- II. This child is tall, due to tallness of both parents, and carries no short genes.
- III. This child is tall, due to father's tallness.
- IV. This child is short, due to short gene from each parent.

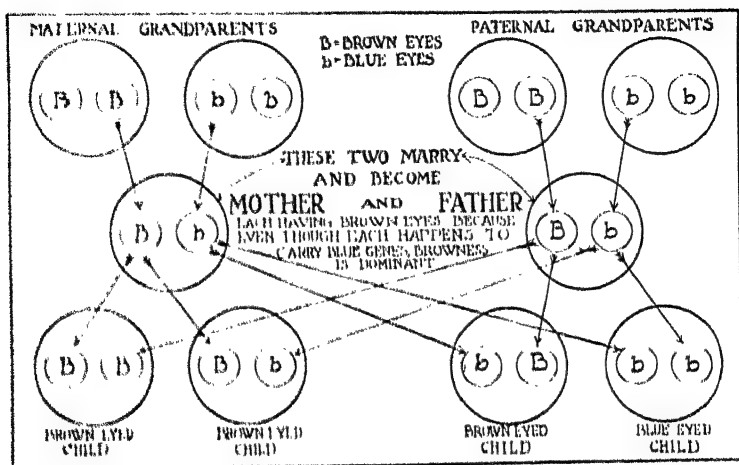


Fig. 11

Illustrating perpetuity of germ cells in the stream of heredity

Diagram showing laws of heredity in relation to eye color—children have 3 chances to 1 to be brown-eyed.

Brown Eyes and Blue Eyes. An individual, we will say, having received in the first fertilized germ cell, which was his own beginning, a gene for blue eyes from his mother and one for brown eyes from his father, has brown eyes. Why? Because brownness, which results from a deposition of pigment on an eye that would be blue if left to its own background, covers over the blueness, and is the active, positive, or dominant, factor.

When dominant factors meet, the result is, of course, the dominant trait in the resulting individual. When a dominant factor meets a recessive, the result is the dominant trait, at least to some extent. When a recessive meets a dominant, again the result is dominance. When recessive factors meet recessive, the result is the recessive trait, whatever it may be.

Suppose a man and woman marry and have a large family. The father's eyes are blue, the mother's are brown, but the pair of grandparents on each side were each, one of them blue-eyed and one of them brown-eyed. The germ cells of the father and mother of this large family would then each carry an equal num-

ber of determiners for blue eyes and of determiners for brown eyes. Theoretically, at least, more of their children would have brown eyes than would have blue, because a blue factor meeting a blue would result in blue eyes, a blue meeting a brown would make brown eyes, a brown meeting a blue would make a brown, and a brown meeting a brown would make brown eyes. That is to say, there would be three times the chance for brown eyes that there would be for blue eyes, because brownness is dominant. Of course, the brown eyes resulting from the cross between a blue and a brown would not be so pure a brown as that resulting from the meeting of two browns. They might be hazel. Brown or blue eyes, as well as other characteristics, probably are not the result of just one determiner, but of many. The evidence strongly suggests to us, however, that the results would work out about as we have described. (See Fig. 12.)

Mendelian Laws. Gregor Mendel, a teacher in a little Austrian town called Brünn, was the man who, as the result of experiments on garden peas, was able to give to the world two fundamental laws of heredity, which are called the Mendelian laws.¹ Just as Newton studied the fall of the apple and gave us the law of gravitation, Mendel in his experiments found the following always to be true:

Tall peas crossed with dwarf peas always produced tall peas. The tallness covered the recessiveness of the characteristic for shortness. But of the seeds of this second lot of tall peas, one half carried tallness and one half shortness. So when this second generation of peas was crossed with themselves, the results corresponded with our previous summary:

¹Mendel's First Law. Contrasting qualities or "characters" from the parents travel in pairs in all the body cells of their offspring, both characters having their effect upon body development of the offspring, the dominant qualities showing more plainly than recessive ones.

Mendel's Second Law. While contrasting "characters" from the parents travel together in the body cells of the offspring, yet in the reproductive, or germ, cells of this offspring these characters separate independently, the dominant quality of any one character going into one half of the germ cells and the recessive quality into the other half.

Mendel did his experiments with garden peas, and, of course, had to work out his law with contrasting characters as, for example, green peas and yellow peas; for only when parent characteristics are dissimilar, is there any way of checking results.

Tall plus short equals tall.

Short plus tall equals tall.

Tall plus tall equals tall.

Short plus short equals short.

There was three times the chance for tallness as for shortness, and what actually happened was exactly this: one fourth came up dwarf, three fourths came up tall. When the second generation, or the mixed, was crossed back with dwarfs, what was the result? The impure tall carried one half tall genes and one half short ones. The dwarfs carried all dwarf genes. There were then only one half as many tall genes as dwarf ones. But the tall genes dominated the dwarfs with which they united, resulting, therefore, in tall peas, which took care of one half of all genes that had to do with tallness or shortness, and left the other half all dwarfs, to unite with themselves, which, naturally, produced dwarf peas. The result was that one half of these hybrid peas were tall and one half short; and these shorts, if crossed with themselves, would never produce anything but more shorts. Wherever there was a tall that was the result of the union of two tall genes, the peas growing from its seeds (that is, if not crossed with some other kind) would be always tall. But wherever impure tall, that is tall carrying dwarf genes, even though they looked just like the pure tall, were prevented from crossing with any other plant, the peas would result in being part dwarf and part tall in the proportion we have demonstrated. Crossing yellow and green peas showed the same mathematical results, the yellowness in this case being the dominant trait, the greenness the recessive. Anyone can, of course, by doing the same experiments, find out these things for himself.

The study of the breeding of black or white rabbits, guinea pigs, or rats shows the same laws of heredity. The blackness is the dominant factor, whiteness the recessive; and the same proportions of blackness and whiteness show in the program of crossbreeding.

Heredity a Definite Thing. This study shows us what a wonderful and definite thing heredity is, and how it is governed by fixed laws. The heredity of human beings is not such a simple thing as all this; in its multiplicity and complications it is as

far beyond our mental grasp as the expanse of space and the stars of the heavens.

When we think of the innumerable traits, physical and mental, that make up the physical being and personality and disposition of a human being, we can see how impossible it is for any scientific research to cover or grasp it all. There can be no question, however, that the laws of human heredity in all their complexity are just as precise and definite as are those of the simpler things like the garden peas that Mendel studied. We are impressed with the importance of giving thought to hereditary background, and, yes, to that much-discussed and often abused term, "eugenics;" and we see what a powerful factor in the make-up of an individual is his heredity, and the importance of proper environment and education, in order that poor heredity may be overcome.

What Can and Cannot Be Inherited

Wooden Legs Not Inherited. How great an influence the genes, or determiners, have upon the life and make-up of an individual is at least suggested by our previous study, and it helps us to realize what a mighty natural power is heredity. It is that which is in the germ cell in the beginning that is inherent in the individual developing from that cell.

We can now see the reason why if a man loses an arm or a finger in an accident his child will not, because of this, be born with but one arm or minus a finger. The accident affected certain of his *body* cells, but did not change his *germ* cells. Or, we can see why a child does not inherit a scar or is never born with a knowledge of music. His hereditary genes may make him naturally responsive to music and make it very easy for him to acquire musical knowledge and skill; but, having been born with natural keenness along that line, environment must do the rest. A man receives an injury to his head, which causes him to go insane; his child will not be born mentally defective as a result, because the effect of the man's injury was not upon his germ cells but upon his body cells. Says Wiggam, "His children do not inherit his cracked brain, although they might inherit his inability to dodge brickbats." Quoting Professor Conklin of Princeton, "Wooden legs are not inherited, but wooden heads are." Epilepsy due to injury is not passed on from parent to child, but epilepsy due to defect in an individual's inborn gland or nerve make-up may be, and often is.

What Can Be Inherited? Some of the things that may be inherited are:

1. *Physical characteristics*: as the length of one's nose, the shape of one's teeth, the color of one's eyes and hair, curly hair or straight hair, long fingers or short ones, natural contour of one's features and bony structures, kind of complexion,—all the many characteristics that make up one's physical type.

2. *Mental qualities*: as keenness or dullness of intellect, type of mental ability, positive or negative mental traits, natural insight and judgment, tendency to interest along definite lines.

3. *Temperamental types*: as thoughtfulness or heedlessness, carelessness or caution, impulsiveness or phlegmatism, quickness of temper, responsiveness of disposition, natural sensitiveness, happiness or moodiness of disposition.

4. *Type and tendency of bodily function*: as digestive activity, rapidity of processes of waste and repair, age of development.

5. *Tendencies toward strength or weakness in various organs*: as the ability of any organ to stand wear and tear or to resist disease.

6. *Nervous reserve*, or we may say nervous bank account. Some people are born with a much greater stock of nerve energy than others—this with its influence on all physical and mental functions.

7. *Nerve idiosyncrasies and peculiarities*, manifesting themselves in individual mental make-ups and peculiar nerve reactions to certain conditions.

Are Diseases Inherited? A man, because of natural type, tends to be flat- and narrow-chested. This makes him less resistant to the commonly present germ of tuberculosis, and he acquires the disease. His son inherits his thin, narrow-chested build, but not his tuberculosis. He inherits the susceptibility, but not the disease. If he does not realize his physical shortcoming in this regard and develop a better physique and stronger resistance, he may, like his father, become an easy prey to the germ, especially if by contact with his father's carelessly distributed germs he receives an overdose.

A father has high blood pressure, heart or kidney disease. His son, through the years, develops the same conditions, partly because he inherits his father's tendency to react in this way to wrong habits of living, and partly because he continues these same wrong habits.

Mother has stomach trouble. "Daughter inherits it," it is said. But just what does she really inherit? She inherits the same type of stomach and the tendency to the same nerve re-

actions. She learned her eating habits from her mother, and naturally she reacts to these in the same way; and the results in dyspepsia are similar. She inherited type, not stomach trouble. Even the type passed on to her would not necessarily have meant digestive disturbances had she not eaten at the family table and cultivated the same dietetic shortcomings. Son eats at the same table, but, having inherited a stronger kind of digestion, his stomach stands the strain. But, like his father, we'll say, his untoward reaction to continual wrong eating is in his circulatory system, where his wrong food intake, having gotten safely past his strong digestive tract, does its greatest harm.

Nervous and Physical Tendencies Inherited. Without question, physical reserve, nerve energy, and soundness or weakness of nerve reaction are passed on from parent to child, manifesting themselves generally or in some particular phase of body organ or function. For this reason, father's or mother's nerve and organic response to strain tend to be duplicated. Because of this, epilepsy, migraine headaches, or nervous dyspepsia in the parent often mean the same in the child. The same defect in the nervous make-up of the father or mother is passed on through their germ cells to their offspring. However, the manifestation of similar defect may and often does vary from one generation to another. For example, defective nerve reactions may produce migraine (sick headaches) in the parent. The child may inherit the nerve defect, but it may or may not produce exactly the same result in the child. The child may have, instead of sick headaches, periodic attacks of indigestion or constipation or biliousness or nervous spells. These are sometimes spoken of as migraine equivalents. Likewise, epilepsy in the father or mother sometimes produces peculiarities and weaknesses in the nervous make-up of the child, which do not manifest themselves in epileptic attacks.

Alcoholism itself is not inherited, but lack of self-control and emotional and nerve-cell reactions to the poisonous effect of alcohol may be and often are passed on from father to son.

How May Germ Cells Be Affected? Up to this point we have been considering things inherent within the germ cell itself. Now may the germ cell be influenced or affected by external

conditions? While the genes, or determiners, cannot be changed, yet can outside influences affect in any degree the germ cells? These important cells continually receive their nourishment and life impulses from the blood circulating about them. The blood also is a medium for the carrying of wastes and any poisonous substances that may be on their way to elimination. These changing blood conditions must affect in a general way all body cells, and as the germ cells are fed by the same blood, why should not they as well feel any deleterious influence?

Alcohol and Germ Cells. We have reason to believe that a father addicted to alcohol poisons his own germ cells, and that a child developed from one of these springs from a cell that has been affected and made defective by this poison. See page 48. Likewise, if in a parent's system there is continually an excess of poisons as the result of intemperate eating, or any wrong habit, for that matter, there is little question that his germ cells may be weakened in some way by this, and that the children coming from any of these may have that much less chance for a successful life.

Is Syphilis Inherited? The question of the inheritance of syphilis has been a much-discussed one. It is well known that the child of a syphilitic father is very often syphilitic even though the mother escapes. It used to be thought that the infective agent of syphilis could be passed from the father to his child at the time of fertilization through the germ cell. We know now that this cannot be, for the germ of syphilis is larger than the sperm cell that would carry it. And evidence goes to show that the way the father passes on syphilis to his offspring is through the blood of the mother, the child being infected during prenatal life. This may be so, it seems, even though the mother shows no sign of the disease, her body having been strong enough to resist it as far as she is concerned, but still having carried enough of the infection to give it to the child. Whichever way it is, it still remains true that a syphilitic father is a dangerous sort of parent for any child to have.

Nature in many instances seems to protect the child from a disease of which the mother might be suffering during the child's intrauterine life. See page 55. But malaria is another

disease that appears at times to be inherited, not, however, directly through the germ cell, but from the blood of a mother suffering of the disease while carrying her unborn child. Likewise, babies have been known to have been born with measles, smallpox, and other like infectious diseases.

Ductless, or Endocrine Glands. The action of the *ductless*, or *endocrine*, glands (for example, the thyroid, adrenal, and others; see pages 67, 68) is not fully understood. But it is known that these glands do secrete vital substances called *hormones*, which, as messengers circulating in the blood, influence all organic and nerve activities. It is known, too, that the activity of these endocrine glands and the condition of their hormones are affected by nervous and emotional states and by conditions of body health and nutrition. To illustrate: it has been found that fright, anger, or other conditions of emotional excitement cause the adrenal glands to throw out an excess of "emergency" secretion, which raises blood pressure and swings all body forces into rapid and vigorous action. This is why a person is able to do so much or to have apparently superhuman strength under certain conditions of emergency or excitement—carry the piano out, maybe, when the house is afire! Such strain, of course, depletes the adrenal glands, and one is exhausted after such effort or after an emotional strain such as a fright or a fit of anger. In chronic exhaustion of the adrenals one's blood pressure is often low and body forces are sluggish.

Likewise, the activity of the thyroid gland may be abnormally increased by conditions of irritation in the intestinal tract. For example, poisons are often generated there, or elsewhere perhaps, that lead to excessive activity of this important endocrine gland. This hyperactivity results in nervousness, rapid heart, and other symptoms. Or a thyroid, the secretion of which is below normal, may be, at least partly, the cause of sluggish condition of the system, with perhaps obesity as the result. There are many more examples that might be given of the constant relation between the endocrine glands and body conditions.

The cell, being the body unit, must be affected by those things that influence the whole body in such a definite way. And why may not the hormone supply from these glands affect

for better or for worse the germ cells? We can easily imagine the vital reserve of the germ cell being influenced in this way as well as by other things in the surrounding blood supply. These same nutritional and endocrine conditions probably affect the child during its intrauterine life, and may account, to a great extent, for the prenatal influences that we shall discuss in a later chapter.

As Regards Heredity. In considering the big question of heredity, we must remember four important things:

1. The germ cell itself, with its hereditary factors from both father and mother.
2. Influence on germ cells by surrounding blood, with its wastes and poisons, its food and hormone supply.
3. Prenatal influences during the child's development in the uterus. This will be discussed at length in chapter 7.
4. Modifying influences after birth, of association and example, or what we call environment. See chapter 8.

The first we cannot do much about, except to advise our young folks to make as careful and as wise a selection as possible. The second, which has to do with habit and acquired tendencies on the part of potential parents, comes more definitely within the realm of individual control. The third has to do with the life and care of the expectant mother; and the fourth demands careful thought and action in every home where there are children, actual or prospective.

That only is heredity, strictly speaking, which is handed on from parent to child through the determiners of the germ cell. This phase we can see is largely beyond our control. What genes our child may inherit can be only a matter of conjecture and sometimes of disappointment; but all else that may affect the life and vitality of the germ cell and the future development of the child may be greatly influenced by intelligent care and preparation. And the earlier this care can be given, even to the training of children with the thought of their parenthood in after years, the better opportunities will be theirs who belong to generations yet unborn.

The Sins of the Fathers

Influencing Germ Cells. If through the germ cells the stream of heredity is kept intact; if, as some say, these cells are uninfluenced and unchanged by their surroundings, once they have been stored away in their special corner biding the time when they are to function; if they are unaffected by body conditions in the individual carrying them, how, then, can it be said that "the fathers have eaten a sour grape, and the children's teeth are set on edge"? Can what the father eats or does in any way affect the germ cells in his body or a child coming from one of these cells? That is the question. Or can a man with a good heritage stored in his germ cells cause, by his own living, any deterioration of this heritage, so that his offspring may get less of value in what he passes on to them than he got in the physical legacy he received from his father?

If germ cells are entirely unaffected by what happens to the individual after these germ cells were formed and set aside, how can there be any race degeneracy, or what possibility is there for race betterment? Quick comes the answer—by proper selection when it comes to marriage, by discouraging the propagation of the deficient and the unfit; in other words, by eugenics and birth control. True, this is one way, and an important one, no doubt; and let the birth control enthusiasts preach their gospel and ply their methods, seeing to it that they stress quite as much the having of large families by the fit as they discourage small ones or none by those unfit.

But again we come back to our question. Does the life of a person, no matter with what his germ cells began, detract in any way from that which any one of these germ cells may be able to pass on to a child developing from it? Or we may ask, Do the life and habits of individuals have any effect upon the generation springing from them, or is the heritage of the generation of to-morrow influenced at all by the lives of the generation living to-day? Does my life affect in any degree the heredity of the child to be born from me? Or is variation all due to mate

selection—the marrying out of some strains, the marrying in of others? This is a big question, and we may find many discussions pro and con. There is no doubt that by mate selection the race may be greatly improved; but does race betterment depend only upon that?

The Child of an Alcoholic. The child of an alcoholic, it is well known, is very liable to have a deficiency in his nervous system; he may show mental and nerve defect, emotional instability, lack of self-control; he may be epileptic, susceptible to nervous and mental disorders, and show varied signs of degeneracy, both mental and physical. This can be explained, as already discussed in our last chapter, on the basis of the supposition that the alcohol in the blood poisons the germ cells. It seems to do something to these reproductive cells that takes from them the ability to pass on their full first value to the child. The alcohol imbibed by the man has taken as toll from his germ cells something that it was his child's right to receive. In not giving himself proper care, he stole from his child. And the father may not have been a sot, either. He may have been a tippler or a moderate drinker. He may have seemed to stand the strain very well. Like the tobacco-smoking centenarian, he may even have lived to an old age. But his children are not quite what they might have been. The marks of degeneracy in the children very often attest the fact of the father's weakness. His germ cells may have paid more for his error in living than he did himself, like a legacy used up by the father in profligate living,—enough to last him through all his wastefulness, but very little left for his children.

Tobacco as a Race Poison. It is reasonable to suppose that what is true of alcoholic poison is also true of other poisons. Take again, for example, our friend who smoked all his life and still lived past his threescore years and ten. It may be more difficult to find the son who has lived to the same age. All that the father can give to his child he must give through the tiny germ cell. To lessen the life impetus passed on at that time, upon which the physical plane of after years must more or less depend, is a far more serious thing than to place extra wear and tear on tissues already established in the adult. We may say

that injury to a man's body cells, bad as that may be, can never do the harm to him that the same injury may do, through his germ cells, to his offspring. It would seem that the earlier in development harm is done, the greater and more permanent will be the harm. Injury to a germ cell is harm done at the very beginning of things.

Dr. G. Hardy Clark, in discussing the effect of tobacco upon the race, says: "That any one of the tobacco poisons might lower the vitality and change the quality of the germ plasm of man and woman is, by analogy, almost a foregone conclusion. Ethyl alcohol, which is usually drunk, if taken by both parents of a litter of rats, will result in degenerate and defective animals. If the process is continued through several generations, the germ plasm utterly fails to carry on its functions. The ethyl alcohol of tobacco, measuring approximately 40 milligrams to twenty cigarettes, is far more poisonous and destructive to germ plasm, and may alone account for the rapidly increasing number of criminal degenerates with which society is afflicted. . . . The conclusion seems to be irresistible that tobacco poisoning fairly enters with those of syphilis, alcohol, and other race poisons as a factor in arriving at the physical and mental evaluation of infants, and the determination of criminal proclivities of children."—"*On the Use of Tobacco.*"

Syphilis. Syphilis is a disease that manifests itself in manifold symptoms; but, associated with all these is a poisoned blood, which carries its taint to every cell; and the same blood that feeds the body cells also carries nourishment—and poisons!—to the germ cells. The vital forces of these cells are strengthened by the food and depressed by the poisons; and who can say that syphilis in the parent, whether or not it is passed on as an active disease to the child, does not weaken that child in its cell beginnings and in the impetus for life that it receives? It seems quite evident that in this way the germ cell may be and often is impaired, and its possibilities for growth and development greatly altered. Syphilis, however, rarely stops with merely taking vital toll from the germ cells. The frequency with which babies are born with the disease in active progress in their little bodies shows that not only does the father, having

had this disease, weaken the germ cell from which his child develops, but he also runs the great risk of bequeathing to the child, through the mother's blood, the dread disease itself.

Germ Cells Pay. These things being true of alcohol, tobacco, and syphilis, which are spoken of as "race poisons" because of their part in carrying race degeneracy, how can we escape the thought that germ cells pay in toll of some kind for many of the physical shortcomings of the owner? Surely the blood, with its food supply adequate or inadequate, its waste normal or excessive, its hormones, and often its poisons, as it continually surrounds and feeds the body cells, including the germ cell, must have its influence, good or bad, on these reproductive cells, and thus will in a measure determine what of strength and stability will be handed down to the next generation. While such possibilities of change in the germ cell is still a moot question, many insisting on the permanency of the quality as well as of the structure of the germ plasm, yet experimental work has been done that tends to show that the quality of the germ plasm may be altered by extraneous influences, and that conditions in the surrounding blood stream do affect for better or for worse the germ cells as well as the regular body cells. So while it seems that heredity in the sense of genes and determiners cannot be changed by the owner of any particular set of germ cells, yet there can be little question that the heritage of any child or of any generation, in the sense of vitality, strength, endurance, poise, resistance, and reserve, may be altered by the knowledge, wisdom, and self-control of potential fathers and mothers. What greater inspiration can any young person have, if he but be made to realize this, than to live intelligently for the sake of the children that may be his? Should not this be more often presented to young people, that they might be influenced by the ideals of higher and better living, not only for themselves but also for their children? See chapter 10.

Limitations and Possibilities

Lifelong Indulgence. We often hear a remark like this: "My Uncle John smoked and chewed tobacco from the time he was ten years old, and he lived to be a hundred." Or, "My father lived on hot cakes and coffee, meat and potatoes and pie,—never ate a vegetable in his life,—and he was eighty-nine when he died. After all, this question of tobacco and how you eat can't be so important."

Hold on now; just listen a minute. What does the above, which has often been true, really prove? It proves merely that "father" and "Uncle John" inherited, through the germ cells from which they sprang, a large amount of vitality and power of resistance to disease and untoward influences; that, because of this, they have been able, in spite of life's wear and tear and their own physical shortcomings, to live far beyond their allotted years. It proves that in some way their nervous and organic systems were able to adjust themselves to the continual nicotine intake or to the lack of diet balance so that they still were able to live on through the years. People have been known to live for years, taking eight or ten grains of morphine daily, and be apparently in a fair degree of health and ability to carry on; but who wants to take ten grains of morphine daily, or who would advise the race as a whole so to indulge?

Just how much anyone's physical or nervous system will stand of ill treatment can be determined only by trying it out; and what individual wants to risk such experimentation? Rather give ourselves every chance for health and long life, and then note results.

There is no way of determining one's limitations except by bringing to bear definite forces of extreme wear and tear, poison and disease, and then seeing just how long one would last. Some one might be found who could run the gantlet and still live; but to what gain or what profit? Just how much one's physical being and nervous system can endure depends to a great extent on the natural strength and resistance received by heredity. But no

one can ever know just what is his inheritance. One can never estimate how long his stomach will stand abuse, how much strain can be placed on heart, kidneys, or nervous system, without a break. No one knows without trying it out; and who, if he gives the matter thought, will care to experiment in this way? Type and strength of organ rest in great measure on inherited genes; but genes cannot be estimated either as to strength or kind. So safety lies only in being on the right side. In conservatism rests the greatest advantage.

Possibilities of Attainment. But there is another side to this discussion. We have been talking about limitations. What about possibilities? Possibilities as well as limitations are inherited through the chromosomal genes, or determiners; and as no one knows his limitations, so is no one aware of his possibilities. And as there is little inducement to experiment as to limitations,—that is, no one wants to see just how much of bad habit it will take to kill himself,—there is conversely great incentive to find out what one's possibilities may be. For example, one could take quite an interest in seeing to what heights right living might develop one's child.

To illustrate further: We will say, and it is probably true, that one's tallness is limited by his heredity. Father, mother, grandparents, have been comparatively short. No one with such a hereditary background could expect to be six feet tall. *But, he can develop his body to the full height permitted by this heritage.* If wrong habits, privation, defective diet, cigarettes, etc., might keep him from reaching the full height determined by his germ cells, his fullest height may certainly be encouraged by his taking the opposite course,—that of seeking the best possible environment and opportunity for physical development. The average height of the Japanese, we are told, definitely increased when more exercise and better nutritional habits were introduced among the people. Lack of a balanced diet has evidently been a serious handicap to these people in past centuries.

Likewise, long life. There is no doubt an age at which any given individual would wear out no matter how ideal his conditions of life or how healthful his living might be. Just how long one's body might last with the very best of care, no one

knows. The only thing to do is to try it and see. No one does quite as well as he knows; but to work to the end of health and long life is certainly worth while, both as to its effect on physical life and on the character of the individual.

The more nearly one reaches an intelligent ideal of right living, the longer his life will be, barring automobile accidents and the like. And when one considers it a duty not only to himself but also to his family, friends, and the community to live as long and as healthful a life as possible, to make the effort to achieve this standard by an adherence to right physical living becomes a matter of personal integrity, and means strength of character as well as vigor of body.

Mental Possibilities. Each one, no doubt, has his mental and psychological limitations. Not all, even under the same conditions of environment and education, would become Gladstones or Lincolns. Intelligence quotients would vary even if environment were always the same. For the sake of the many things to be done and the many places to be filled in this world, it is a good thing that this is so. It is well, no doubt, that not all are born to be college professors, statesmen, or scientists. But how few have ever had the opportunity of being the best that they might have been in whatever capacity it has been their lot to serve! Because of the many and varied factors affecting the individual, and most of them brought to bear before the time of his own ability to control them, who ever has reached the limit of his mental and intellectual capacities?

The Parent's First Duty. What parent knows the possibilities, mental and physical, of a child born to him? Should not every parent consider it his first duty to study that he may know how to give his child the opportunity to develop to the very highest degree the capabilities inherent within him? Possibilities are never reached. No child ever yet had the chance to be his best. So do not say, "Look at that child with no care and never sick, and at mine with every care and always something the matter with him!"—and then conclude that good care doesn't pay. Be glad for the one child, that his inherent buoyancy lifts him above adverse conditions. Admit that your own has inherited weaknesses difficult to overcome, and bend your thought and ener-

gies to finding out, if possible, the shortcomings in your program for him. Maybe too much apparent solicitude and nagging have been a handicap. Reform in this regard is necessary, but don't give up important ideals.

Given the same hereditary background and the same "leanings," the one who lives to certain standards will be the best mechanic, the best business man, or the best teacher, whichever the case may be. And other things being equal, the child on the best program—physically, mentally, and spiritually—will go far ahead of the one who comes up in a haphazard way and without proper training. And, more than this, the child with a poor background, if allowed to come somewhere near his limits, will, in many cases, far outreach the one who, because of ignorance or neglect, was allowed to fall far below what he might have been. A child with a poor heritage but coming close to his margin of limit may tower above the one with the better heredity but reaching only half of his possibilities.

There is always such a wide margin for possible improvement that comparing one individual with another or one child with another never proves anything. Just become as intelligent as you can, do your best, see what you can accomplish with that child of yours. Daily pray for grace and vision, for strength of body and determination of soul, that you may do as well as you know how to do in order that your child may have the opportunity of developing to the highest degree made possible by his heritage

Prenatal Influence

Food Supply of the Prenatal Child. The same blood elements that feed the mother's body during the prenatal life of the child feed the child as it lies in its human cradle. The child begins as a tiny two-in-one cell, but rapidly grows and develops until at birth it weighs seven pounds, more or less. It receives from the mother's blood all the building material necessary to accomplish the progressive change. It receives food with all its elements for building cartilage, bone, muscle, nerve, gland, skin, and all else that goes into the body structure. The quality of the building must of necessity be influenced greatly by the kind of food material supplied.

However, the mother's blood also contains other things than food material. There are circulating wastes and toxic elements varying with organic health and with the balance between processes of waste and of repair. Under usual conditions, however, even in the face of the mother's marked ill health, the freedom of the child at birth from abnormalities of organ or function suggests the thought that there is an intelligence in nature that selects for the child the best that the mother's blood has to offer, rejecting as far as possible those things that would be detrimental. It seems that nature outdoes herself in the interest of the child and of the race. Given a good heritage of genes and strength and buoyancy of cell at time of fertilization, the evidence is that baby has a fairly good chance for successful development, provided that nature can in any way manage to get hold of the things like lime, iron, and other food supplies that baby must have for body building. Nature, it seems, will get this necessary supply if possible, even if she has to steal it from that which mother really needs for herself. Baby is first, says natural law, and we mothers are very thankful for it. Heritage and impetus for growth comes just as much from the father as from the mother; but, conception having been accomplished, material and supply for the child come from the mother for nine months.

Mother's Blood and the Child. Again, as we have said, there can be little question that the child developing in its mother's body must be affected to some extent by the quality of the blood that feeds it. In what way may this be? *First*, by the amount of its food supply. The total amount may be so low that baby is thin and undernourished at birth. It may be weak and feeble,—even its cry indicating its impoverished physical state. This often happens when the mother has been suffering of a wasting disease, as tuberculosis or heart disease, or a severe grade of undernutrition from any cause.

Second, by the character of the food supply. The quantity may be enough, but the quality may be deficient in many ways. The mother's food intake may be such that, while the total amount is ample, there is deficiency in certain important elements. The most notable example of this is the lack of necessary lime for the building of baby's bones and teeth, making baby more susceptible to rickets and less likely later to have hard, sound teeth.

Even under conditions of such deficiencies, nature, it seems, attempts to put up a pretty good showing at the time of baby's birth, for when he arrives he usually looks pretty much like the typical infant,—fat and round and pink,—with lusty cries and active muscles. Whatever may be his shortcomings, they do not show as he is introduced to his admiring relatives. He is a darling baby, apparently normal in every respect. But what kind of bones and teeth he is going to have in the coming months, as well as what reserve he has in other ways, remains to be seen as time goes by.

Let us remember that what baby gets from his mother's blood during his prenatal development is largely building material, and that while his germ-cell heritage may be fine, yet the nourishment he receives from his mother determines to an extent at least how well he may build upon that heritage. This affects his development at its very outset; and, because of its fundamental nature, defects in this prenatal building must tend to have an influence on his body structure in postnatal life. We would not say that prenatal deficiencies may not, to an extent, and at times entirely, be overcome after birth, yet such short-

comings must of necessity increase the task of total accomplishment.

Prenatal Child's Nervous System. How may the nervous system of the prenatal child be affected? There is one part of the body structure that is more important than all else, and that is the nervous system. This wonderful connecting and controlling mechanism governs every activity of the body, whether of organ, tissue, or cell, and it is important that the nervous tissues, perhaps more than all other body parts, receive their proper supply of building material. When there is a deficiency in the quality of the blood from which the child receives its nourishment, the nerve cells cannot help feeling the shortage. Such nerves cannot become so strong, so well balanced, so resilient, so resistant, as nerves that are properly fed. Subtly responsive nerve mechanism cannot work so perfectly or be so equal to the task of governing and controlling either in conscious or automatic make-up as if properly built by adequate food. The food, or lack of it, passing on from mother to child, we must conclude has a definite influence on the developing nervous system. Surely if a poor food supply during prenatal life has its effect on the child's teeth, it is just as reasonable to suppose that the developing nerves may lack from the same cause.

There are various ways in which a vicious circle may be established, interfering with the important cycle that includes the source of the child's nutrition. The mental attitude of the mother and the condition of her nerves during the prenatal period may so interfere with her appetite, with her powers of assimilation and of food appropriation, that her baby may not have finally handed to it the right nourishment even though the mother has the correct food before her and does her best to partake of it. Final body utilization of food is no doubt affected to a great extent by the mother's peace of mind, her self-control, her nerve poise. A trustful, happy mental state then favors proper nutrition not only of the mother but of her child as well. So not only what the mother eats, but how the condition of her nervous system permits of her body's using that food, will influence for good or ill the development of her child. So in this perhaps round-about way we can see how the mother's mental

state during pregnancy may affect the child's nutrition and, through it, his nervous system and disposition.

Glands and Hormones. Then there are the endocrine glands with their hormones. (See chapters 4 and 9.) These glands seem to exert a profound influence on all body processes. We know that mental as well as body conditions affect endocrine activity. (See page 43.) Hormone influence continually pervades the blood stream; and it is probable that these hormones, as they pass to the child from maternal blood, in some subtle way influence cellular activity in the wonderful building of the new life.

As these hormones fluctuate in amount and kind, dependent on mental attitudes and emotions, as well as on nutritional and toxic states, who can say that in this way mental conditions on the part of the mother may not have their effect on the child? Anyway, it is conceded by all that an attitude of serenity and happiness is by far the ideal state for the expectant mother to cultivate, not only for her own sake but also for the sake of her offspring.

But what about marking a child for a definite career—making him musical, for example, or artistic, or of a mechanical turn? We have seen the basis on which the mother, by her physical and mental life, may affect the unborn child. There is nothing in any of this, however, that would make it seem that because a mother takes music lessons during her pregnancy the child will be musically inclined. The mother's music may help to keep her happy, and in this way the child will be benefited and be given stronger nerves to carry out whatever it may be his lot in life to do. But whether or not he will have a musical inclination by heritage depends on the determiners, genes, or chromosomes given him in his cell beginnings. There is nothing that can be made to show that more than this is even remotely possible. Natural tendencies toward music, mechanics, or what else, come in genes along with color of eyes and hair. Prenatal influence tends only to establish a good beginning in the way of strength and poise to carry out the inherited tendency.

Effect of Fright. May a mother's fright at some object so affect the child that a mark suggestive of the cause of the fright

will appear on the child's body at birth? For example, if the mother is frightened at a toad, may a birthmark suggestive of a toad be apparent on baby's body? Or may a craving on the part of the mother for some article of food leave its mark? Is there any connection between the mother's persistent desire for strawberries and the strawberry-shaped mole on baby's body?

The mother's fright or the mother's craving may influence to an extent and for the time the character of the blood that is feeding the child, and thus may have some effect on the child's nervous system. This would fortunately in most cases be temporary and adjustable. But there is no way possible whereby we might imagine that there could be any definite connection between an object causing emotional shock or desire on the mother's part and any peculiarity or mark in the child's physical make-up. There are few mothers who do not, during the period of pregnancy, have experiences that would mark their child, were this possible. But when we think of normal babies born of mothers who have passed at some time during pregnancy through harrowing circumstances, we must know that nature's laws are so planned that baby is well shielded from the evil effects of a mother's temporary fright and emotionalism.

It is the condition or thing that is more or less constant during pregnancy, that prevails day by day, week after week, that may in the long run have a detrimental effect on baby's developing physical and nervous system. And even a deleterious condition obtaining much of the time during the prenatal period usually leaves no definite mark; it simply tends to cause in the child a condition of lessened resistance and vitality, its nature and extent depending somewhat on the child's germ-cell heritage.

Where a birthmark appears to have been caused by some experience on the part of the mother, it can always be explained on the basis of coincidence. Just as abnormalities, like moles, warts, and tumors, may appear on anyone's body, so may there be occasionally marks on baby's body at birth. A common birthmark is one caused by an enlargement of the capillaries in some particular area. These cause red spots or blood-vessel tumors that sometimes need to be removed, but usually they are of little importance, and tend to fade as the child grows older.

Prenatal Accidents. There are, of course, prenatal accidents, although fortunately these are rare. The child may become entangled in the cord that connects it with the mother, and the circulation of a certain part of its body be interfered with. In this way the development of an arm or some other part of the body may be hindered. A lack of sufficient amniotic fluid (the fluid that surrounds baby) may cause pressure on the child, and in some way handicap its development.

Maldevelopment may be the result of a defect in the germ cell in the beginning; but these things are very rare, and we are reminded again to what an extent natural law guards the baby, that it may have in its very beginning of life the best that nature has to offer it. So wise is the plan for the safety of the race. Let every mother trust her baby, as it grows within her, to the all-wise power who planned nature's mechanism in the interests of her child, knowing that trust, peace of mind, and confidence are, perhaps, after all, of greatest importance in assuring to the child the best possible adaptation of its building supply to its body needs.

Environment

Improving on Heredity. But baby is here; and is his case hopeless because his grandfather was a thief, his father a ne'er-do-well, and his mother a weakling—sick all the time before he was born? Well, such a situation may complicate matters, to be sure; principally, however, because after baby's birth father will probably continue to be a "no-account," mother will still be sick, and this unfortunate combination on the part of those to whose care he is committed can greatly lessen his chances for any kind of helpful environment.

If the father can be given a new inspiration, the mother find health, and the two be properly instructed as to baby's care and be given the urge to carry out this instruction, baby may have a pretty good chance after all; perhaps quite as good as, or even better than, the child who comes with a better heritage, but who, through some unfortunate turn, is left without proper care and training.

After all, the best that most fathers and mothers can do with their new baby before them is to take what has been given them with many things in hereditary background and prenatal influences that are imperfect, and by careful study and consecration to their task develop that child in such a way as to overcome insofar as possible hereditary and prenatal shortcomings.

The trouble is, the hereditary familial defects are still so marked in father and mother that rarely are they transformed by the new responsibility thrust upon them. They continue on in their deficiencies so that the child has, in addition to its heritage of weakness, the continued influence of bad training and unfavorable environment. But if father and mother can be inspired to study and to do, if they can be made to get the right vision of the possibilities latent in that child and of their responsibility in the matter, there is much hope for baby in spite of his hereditary and prenatal background. Harder because of this background? Yes, but still great accomplishment is possible.

And remember that though heredity may be said to place limitations, probably no child or individual of any age has ever yet reached his limits, and that there is always room for improvement in parental influence and care and in environmental surroundings. The thought certainly is one to spur every parent in the fear of God to do his best.

How May the Parent Give His Best? What a parent gives to his child in spiritual and cultural atmosphere, in example, in inspiration, in guidance, is so much a matter of character and self-mastery on the parent's part that until humanity reaches a state of perfection not yet attained, we must feel that with every effort there will still be weak points in any child's upbringing; that is, every child's environment might be improved. Perfection is never reached. The best possible is never given any child, even by those of us who reiterate, "I have done my best." Surely it seems we have, but until every parent is absolutely and always on top in his spiritual and character experience, his child cannot be said to have had the best that he might have had. Just as we must admit our imperfections, so must we grant that our child has suffered lack because of them.

However, such definite and marked results are continually seen as the result of something like right care and training that our courage rises, and we have come to have confidence and to expect very definite things for our children. The child who has had in his home, during his early years, somewhere near the right physical care and mental training, with proper emotional and spiritual influences more or less continually about him, shows the results of this when he reaches manhood or womanhood. To the end of this accomplishment should every father and mother bend their energies that their children may have as nearly as possible the chance that is their due.

Every parent longs for his child to have this opportunity. For this he would give his life if it should come as an emergency measure. The big test lies in holding to this ideal in the humdrum of daily living, for it is the day-by-day program that counts and that makes or breaks our children.

The Difficulty of Reaching Ideals. So if some good man's son goes to the dogs, don't blame principles of training or deny

the proverb that says, "Train up a child in the way he should go: and when he is old, he will not depart from it." Rather say that the child's training and environment, good as they may seem to have been, have not been quite equal to the task of counteracting the shortcomings of his heritage, good as that, too, may seem to have been; that for some reason there was a lack somewhere in the child's physical, nervous, psychological, or spiritual surroundings—perhaps a failure in understanding, or, yes, in salesmanship on the parents' part. Ideals, to become part of the child's philosophy, must be "sold" to him, and this is where a well-meaning and even a well-informed parent may easily fail. To give in some way to that child the "inner urge" that must be back of all successful accomplishment for him and by him, is the difficult thing.

And so somehow with the child who has gone wrong, hereditary lack was not matched up with necessary environmental supply—hereditary unbalance with environmental stabilizer, hereditary weakness with the peculiar environmental factors in this case needed to cultivate strength. Somewhere these parents failed. The diagnosis may be hard to make, either by the parents or by the ones judging them; but even if made, let him who is perfect in patience, in parental insight, and who has made no mistakes in his own home, be the first to take his place on the judgment seat.

If every child could have thrown about him the exact care, training, and influence necessary to counteract the shortcomings and weaknesses of his peculiar hereditary background, weakness of heritage would not need to be an insurmountable obstacle. As long as human frailty and lack of wisdom and insight make the absolute realization of this ideal impossible, we can never lay the blame on heredity, and complacently shift responsibility. Even if the child be an adopted one—"blood tells," you say; yes, but home culture tells more. And we fail too often with our "very own" to blame some other family tree for our failure with the little transplanted one.

Every parent, when his child falls far short, must face the sad insistence within his soul that if he had known just how, or even had always done as well as he knew, his child might have been

saved his failure. This is why child training in any home should never be made a secondary matter, and why there should be recognition of the fact that study, consecration to the task, and daily seeking of divine aid, are the only things that can assure to the parent the success he longs for in the rearing of his children.

So don't say, "The child was born wrong --- there was no help for it." Just be sure there was a way, but that the way was not discovered, or, if known, it was not sufficiently utilized. The problem was a difficult one that might have been solved if only some one had been wise enough---if one could only have turned to the back of the book and found the answer, and then have had the strength of persistence to do the work.

That one need not succumb to the insistence of heredity is suggested by the following quotation: "Clearly it is not necessary to have a characteristic merely because one inherits it. Or more properly, characteristics are not inherited at all; what one inherits is certain material that under certain conditions will produce a particular characteristic; if those conditions are not supplied, some other characteristic is produced."--- *Herbert S. Jennings, Johns Hopkins University.*

And again: "It is not true that a man is predetermined in or by the germ cell, and that a foreordained man with foreordained characteristics is going to grow up willy-nilly. We predict a certain kind of man by studying his ancestry, merely because we expect for him a certain type of general environment not profoundly different from that of his ancestors. It is expected environment which leads us to count pretty strongly on heredity, and not that the heredity in the germ package predetermines all he shall be. F. A. Woods pointed this out nearly fifteen years ago: 'Of course there are limits to the alterations possible by environment, but they are far from being reached as yet with human beings.' "--- "*The Fruit of the Family Tree*," Wiggam.

SECTION III

The Baby's Parents



Few fathers and mothers appreciate the importance of the inheritance they bestow upon their child.

LEWIS

Some Anatomy and Physiology

What Are Glands? We hear a great deal about glands these days. But just what are they? Glands are collections of cells held together by a network of fibrous tissue, and these cells are actively engaged in making something, the materials for which are derived from the blood that circulates through and around the cells. This something that the gland makes or manufactures is called the *secretion* of the gland, and in most cases this secretion is passed out of the gland through a tube, or duct, into some open cavity or place that receives it and where it is used; as, for example, the digestive juices, which are secreted in glands along the digestive tract and are poured out into the stomach and intestines to play their part in the preparation of food for absorption, or the sweat and oil glands, passing out their secretions to the outside of the skin.

Then there is another class of glands, the *lymphatic glands*,¹

like those we sometimes feel in the neck as "kernels" when we have a sore throat or a cold. Such glands are scattered about all through the body, and in them are made white blood cells, the policemen of the blood. The lymphatic vessels, or ducts, form the connection between these glands and the blood.

Then, we have the third class of glands,—glands the secretions of which are very important, but which, because they have no tube, or duct outlets (the secretion in

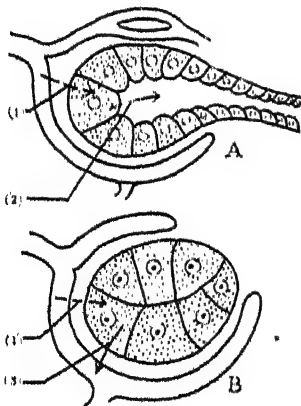


Fig. 14

A. External secretion.

B. Internal secretion.

1. Passage of food from capillary to gland.

2. Passage of secretion from gland cells into duct.

3. Passage of secretion from gland cells into capillary.

¹Technically, the "lymph glands" are not glands at all, and should be spoken of as "lymph nodes." However, since they are so commonly called glands, we have included them here. See "Human Body and How to Keep It in Health," page 331.

every case being absorbed directly into the blood), are called *ductless glands*, and their secretion is spoken of as an *internal secretion*. These internal secretions affect in a very important way all body activities. They can be thought of as regulating influences, which, as they enter the blood, tend to control various body processes.

On page 43 we have spoken of the *adrenal glands* and their action. Then there is the *thyroid gland*, the secretion of which helps to control the rapidity of the processes of waste and repair.

There is the *pituitary gland*, a sort of master gland, in the base of the brain, which governs development, and has a regulating influence on the other ductless glands.

There is the *pancreas*, which not only is a gland that sends out a digestive juice through a duct to the intestines, but has also a ductless secretion, one which, absorbed at once into the blood, helps to regulate the body's ability to burn up the sugar that is sent to it from the digestive tract. Glands of internal secretion are also spoken of as endocrine glands.

Reproductive Glands.

Now that we have an idea of glands in general, we can better understand the reproductive, or sex glands—

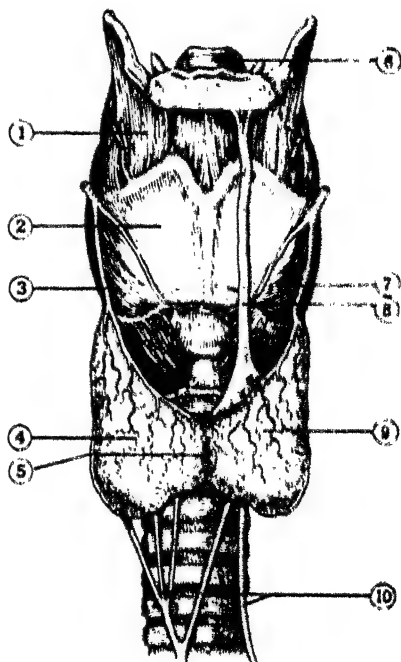


Fig. 13

Front view of the larynx, the upper part of the trachea, showing the thyroid gland in position.

1. Muscles of the larynx.
2. Thyroid cartilage, or "Adam's apple."
3. Superior thyroid.
4. Right lobe of the thyroid gland.
5. Isthmus of the thyroid.
6. Epiglottis.
7. Muscles of the larynx.
8. Small muscle attached to the thyroid gland.
9. Left lobe of the thyroid gland.
10. Interior thyroid veins.

the *ovarics* in the female, the *testes* in the male. These glands are, first, the repositories of the wonderful germ cells we have been studying; but they are also glands of internal secretion, the secretion of the ovary giving a feminine impetus to the organism, that of the testis giving the masculine trend to all body development. The female glands, or ovaries, are located low in the pelvis, well protected within the body cavity; the testes are located in the scrotal sac outside of the body cavity, and, because of their situation, are often a cause of curious inquiry on the part of the small lad, who, when he asks, most certainly should have some kind of intelligent explanation. And this explanation is most helpfully introduced by a simple story of "glands" and how they play an important part in governing life processes, or, we might say, "in helping the body to do its work." The glands about which the small boy is curious are glands that have to do with making him "look, act, and grow like a boy."

While each of these sex glands, the ovary and the testis, sends out by the ductless route an internal secretion, which gives its owner either feminine or masculine traits, it also has a duct that forms an external route, by which the important germ cells may, at the proper time, find an outlet. The ovary—and there are two—sends out its ova through the *Fallopian tube*, or *oviduct*, on either side. The testis sends out its sperm cells through a complicated tube system which, if unraveled, would reach a length of something like twenty-five feet. Like the coils of the intestine, its many convolutions make possible a long route in small space.

Ovulation. Month by month an egg cell, or ovum, that has been especially prepared for this important event, is discharged from one or the other ovary, or perhaps from both. This is called *ovulation*. In the ovary, each egg cell is carried in its own little chamber, called the *graafian follicle*. Gradually one of these follicles works its way toward the outer surface of the ovary, its wall presses against the ovarian wall, pushes out against it, and finally the walls of both the follicle and the ovary become so thin that they break; and at last the tiny egg is free. Where will it go in its new freedom? Ah, waving branches, like floating ribbons extending out over the ovary from the end of the Fallopian tube, draw with seductive influence the tiny egg into the

inviting trail of this tube. The egg does not *have* to enter. It may dodge the branches, skip by and out into the big cavity of the abdomen, and be forever lost; but nature has made it very

easy for these tiny cells, so full of possibilities, to follow a path that might lead to a wonderful opportunity for service.

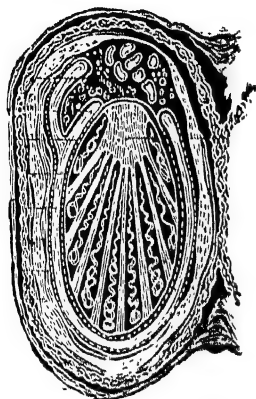


Fig. 15

Horizontal Section of the Testis
(Diagrammatic)

In the spiral tubes shown above, the germ cells develop into spermatozoa. In the crevices between the spiral tubes are the cells that elaborate the internal secretion that gives the masculine trend in all body development.

An Interesting Journey. At this time other things are happening that make at least a pretty story, and no one is sure that it is not quite true. The Fallopian tubes, which lead from the ovaries on either side, pass toward the center of this part of the abdominal cavity spoken of as the pelvis, and enter a pear-shaped chamber called the *uterus*, or *womb*. This chamber exists for the sole purpose of affording a resting place for the ovum should it at any time become fertilized and begin its development as a new being. Its walls are thick and cushionlike, and make, when necessary, just

the right kind of bed for the new life during the time it needs the special nurture and protection of the body. It gradually increases in size as it keeps pace with its developing contents.

When at the time of puberty the ovaries begin their action, that is, the casting out month by month of the tiny egg cell, this interesting room called the uterus takes up the periodic task of being ready each time for the reception of this egg cell. The same increase of circulation that stimulates the ovary to activity brings new blood to the uterus. The main blood vessels in its thick walls grow larger and hold more blood. The uterus itself is larger and softer, its walls more cushionlike, and everything is in readiness for the reception of the egg cell as it comes from the ovary, having made its way through the Fallopian tube.

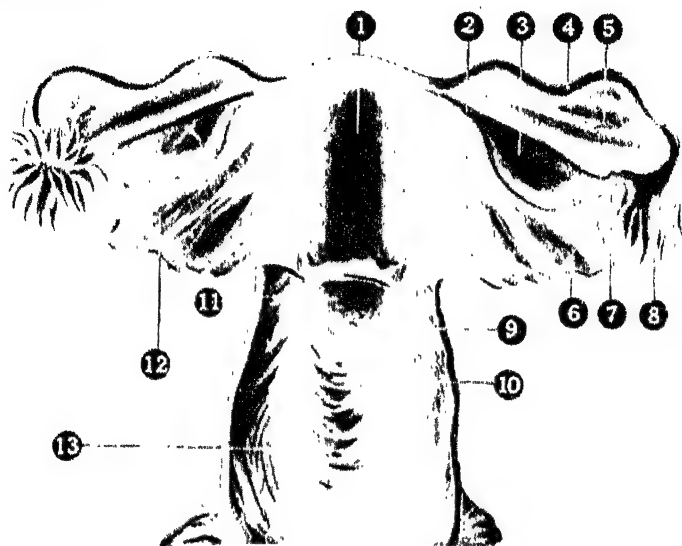


Fig. 16

THE FEMALE GENERATIVE ORGANS

- | | |
|--|---|
| 1. Posterior surface of body of uterus | 9. External opening of uterus |
| 2. Ovarian ligament | 10. Vaginal wall, divided and reflected |
| 3. Ovary | 11. Cervix, or neck of womb |
| 4. Fallopian tube | 12. Broad ligament |
| 5. Connection between ovary and tube | 13. Vagina, front wall |
| 6. Branching end of tube | |

Everything is very interesting and attractive here, but the ovum can be induced to stay only if it has on its journey met and united with a mate, for never can a single unmarried cell take advantage of this resting place. It must simply pass on and be lost, its single delightful journey being all of interest that its life has had to offer it. All the extra blood needed for the bringing about of this journey and the preparation for the possible stay in the world is cast off, and things return to their former quiet state. This casting off of the extra blood is called *menstruation*, and this story suggests the reason for its ceasing when pregnancy begins.

If perchance the ovum on its way from the ovary has met and united with a sperm cell—that is, has become *fertilized*, and

has found a resting place in the uterine wall, *conception* has taken place, and pregnancy has begun. Sperm cells are very active, and once having been introduced into the female reproductive tract they quickly find their way upward into and through the womb, then through the tubal opening into the Fallopian tube. It is in this tubal passage that the ovum is usually found making its way down toward the uterus. There are many sperm cells vying for attention, but one only is successful. The

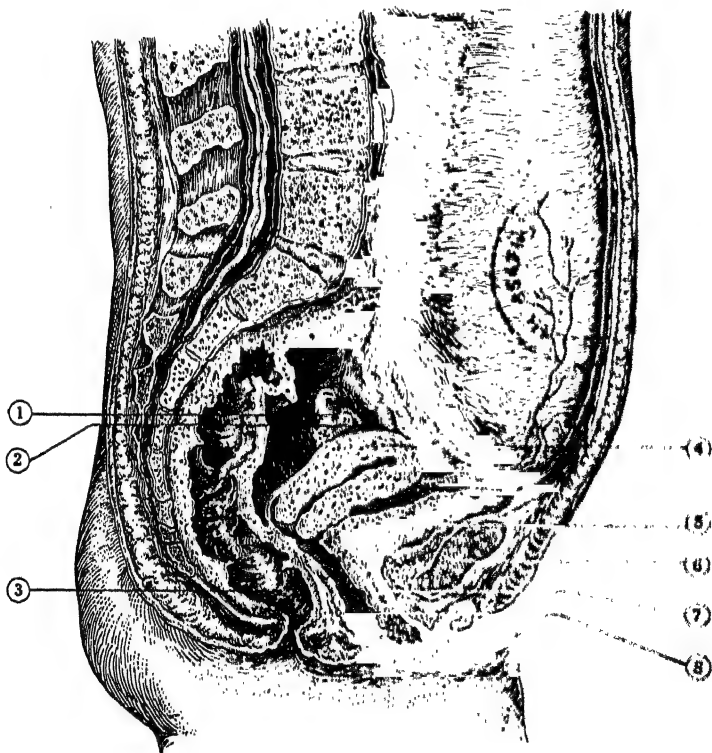


Fig. 17

PELVIS AND LOWER ABDOMINAL CAVITY OF THE FEMALE

1. Ovary
2. Fallopian tube
3. Rectum, or lower bowel
4. Womb, or uterus

5. Urinary bladder
6. Pelvic bone
7. Urethra
8. Vagina

sperm cell is much smaller than the ovum. By means of a perforator in its head (see Figs. 7a and 9) the spermatozoön enters the larger ovum, the motile tail disappears, the head, which contains the nuclear chromatin material of the sperm, moves toward the nucleus of the ovum, and unites with it in the way represented on page 27. This union produces the fertilized cell. Now all the extra blood brought to the pelvis is needed for the great work of supplying the developing child.

Nature is so lavish in her supply of germ cells and in her preparation for possible germ-cell development that for the one to a dozen children that may be born in a family there are something like three hundred ova cast out during the child-bearing years, and many millions of sperm cells. It is a great event in nature, this beginning of a new child, and all the living mechanism is kept in operation for the sake of the auspicious moment when nature finds her opportunity and sees fit to bestow the mysterious vital impetus necessary for procreation.

Interference With Conception. There are many things that may interfere with conception, even in those who desire children. The peculiar vital force, whatever it may be, necessary for reproduction, may be lacking. In just what way general nutritional, glandular, and nervous conditions may affect the individual's power to procreate, we do not know, but we do know that fertility in animals may be greatly decreased by keeping them on diets that are deficient; that along with evidences of poor nutrition and general lowered physical condition goes lessened reproductive power. And many cases of sterility in women anxious to become mothers can be explained only on the basis of nerve and glandular deficiency. Adequate nutrition and a restful vacation may be, and sometimes is, the prescription that brings the desired result.

Other things being equal, those who live strenuous lives of mental and nervous strain are not so likely to have children as are those whose existence is more placid or at least who have opportunity for a proper balance of physical exercise. In these days, when so much work is done by machinery and the strain of living comes more upon the mind, results are seen in lessened fertility among civilized races. And those who give of themselves

in creative work in other lines sometimes seem to do this at the expense of their procreative power.

Inflammation at some time or other may have left conditions that interfere mechanically with the normal functioning of the reproductive mechanism. The oviduct, because of some such condition, may have become so narrowed that there is not room enough for the tiny ovum to get through. Likewise, inflammation may interfere with the functioning of the testes or may close up the passageway of the sperm cells. Because of diseased states, the uterine wall may not be able to make a healthy bed for the ovum, even should it become successfully fertilized.

The condition most often causing the inflammation that so many times produces absolute and hopeless sterility in both man and woman is the venereal disease, *gonorrhea*. As it ascends the genital tract, producing as it goes extreme irritation and inflammatory states, it may at almost any point produce a condition that will interfere with the normal functioning of the organs that have to do with reproduction.

Syphilis interferes with reproduction in that a syphilitic mother often cannot carry her child through to term, either because of the early death of the child, which has acquired syphilis while still in the womb, or because the condition of the womb is such that it cannot carry its burden, and it "miscarries." It is often well that it does so, for the child that is born under such conditions may come into the world with a syphilitic taint, and often with active symptoms of the disease.

A woman having had one child may, because of conditions left as the result of the birth of this baby, be unable to have a second child until necessary medical treatment or perhaps some more or less minor surgery has corrected defects and brought things back to their normal state. No woman should discontinue her medical care after confinement until everything has been done that is necessary to make her quite as normal as before. A misplacement of the womb, by mechanical interference, may at times prevent conception.

A New Being. But conditions being just right, and conception taking place, the fertilized germ cell begins its wonderful development. (See Fig. 2.)

As we have learned, a certain part of the egg begins the new being itself. The cells of the remaining part supply the nourishment. The first two weeks, as has been said in chapter 1, are called the period of the egg; but we may think of the developing ovum as an egg all the way through from the moment it unites with the paternal element to become a combination cell to the time, nine months later, when the soft egg membrane breaks, and baby, leaving its confines, passes out to independent life. (See "a" in Fig. 3.)

In the beginning, the egg is very small. It settles down cozily in the wall of the uterus, and as it grows it increases in size; and in that side of the ovum which rests against the uterine wall there develop blood-vessel outgrowths like the roots of a tree. These grow into the wall of the uterine chamber in such close proximity to the blood vessels there that there is a continual interchange with the mother's blood and that in the blood vessels newly developing. These new blood vessels enlarge and increase by many divisions until at last a spongy branching mass is formed like a flat, bushlike tree, its blood-vessel roots growing into the wall of the uterus. On the other side, however, the branches converge to one important connecting tube going to the child. This connecting tube, or cord, carries the arteries and veins that form the passageway for the blood that must continually pass to and fro. (See "b" in Fig. 3.)

This mass of blood vessels growing into the uterine wall and sending out the *umbilical cord* to the child is called the *placenta* (see "c" in Fig. 3), and is fully developed at about the end of the third month. The placenta is on one side of the uterus and the child on the other—the two really in very close proximity to each other. The length of cord connection is looped and coiled between them, but all are within the egg membrane except where the placental branches extend out into the maternal wall. So the mother who told her little boy that he grew from a tree and that his navel was where they cut him off the stem, was not so far from right after all, was she? And this may vie with the story of the egg for precedence as an interesting and beautiful tale of baby's origin.

The Baby's Father

Fathers in the Making. No, unfair as it may seem, baby cannot choose his own father; but his grandparents can do much toward making a good selection for him. We women sometimes fuss about the men, and wonder why husbands are not different and why fathers are not just what they should be. But I wonder if we ever stop to think that we as mothers have the fathers in the making, and that if they don't turn out just as we would like to have them, perhaps it is our own fault. May it not be true that baby's father fails just to the extent that baby's grandmother (to say nothing of grandfather) failed in training the potential father for parenthood?

And what about the fathers-to-be, who are our sons? We do not often think of that part of it, and the question of fatherhood and family responsibility is never mentioned to the developing father until the die is cast, the mold is set; and in the early training no provision is made for this, the big responsibility of a man's life. No wonder fathers often do not amount to much when it comes to the responsibility of parenthood and child rearing. It is easy to see why such care is usually left to the mother, and, because mother is unequal to the big task that really belongs to both parents, the child loses out in his training. Surely we have here a vicious circle established; and our only hope lies in our younger parents' rising to the occasion, and beginning early to prepare their sons for the right kind of parenthood.

Training for Fatherhood. I heard a mother of boys say just the other day, "I have determined to bend every effort toward training my boys to be good husbands and fathers. In all I plan and do for them, I am going to keep in mind that some day they are going to be the heads of families; and the faults I see in the men of my generation I am going to do my best to train out of my boys while their dispositions and minds are still pliable." So let every woman who groans over the thoughtlessness of her husband and of men in general see to it that she is not preparing her boys for just such thoughtlessness when they

are grown. After all, mothers, it seems the big job is up to us, and if we rise to it with the divine help that is ours for the asking, some of the babies of the future will have the fathers they would have chosen could they have had the wisdom and the opportunity to have done so.

Let the boy as he is growing up learn to appreciate home cares, help with inside responsibilities as well as with outside, learn the importance of orderliness, care for his own room and clothes, learn to hang things up, to clean up a muss he has made, to give attention and proper respect to home routine. From his pre-adolescent years, let each boy be made to realize that some day he is to be a father, and that what he is now has much to do with the kind of father he will be and the kind of children he will have. During this time the boy may be most responsive to such suggestions, and what a lot of slime and mire he can be saved from wading through if he can, at an early age, be inspired with just such an ideal! Father and mother can and should each have a part in the confidential talks that arouse in the lad the very highest emotions of his soul. But if it is mother only who has the opportunity and the inclination, she may be given wisdom to be equal to her task. And so with proper care and thought, baby's father can be greatly improved in the making, much to the baby's advantage and often to father's own appreciation as well.

Responsibility of Being a Father. But we have before us men who have already attained; who have, in setting up a home, taken upon themselves the responsibilities of fatherhood. How few think seriously of such a step! and how many are prone, in this regard, to follow the line of least resistance—just to “let things rock”! All too often father accepts the baby when it comes, but leaves the entire burden of care and training on mother, instead of sharing equally with her in the duties and privileges involved in this the greatest responsibility that ever came to him. Few fathers stop to consider how important for weal or woe is the heritage they give that small mite they proudly call theirs. They accept the joy, the delight, of baby hands, winsome face, and little feet with no thought of what they may have passed on to the tiny soul that will hinder its progress in

life or bring bitter sorrow ere its life's work is done. Let every man who expects ever to have a child put himself in training for this epochal event in his life, and prepare himself so that when baby comes he may say, "My son (or my daughter), I have given you the very best that it was possible for me to cultivate within myself. I have bequeathed you clean blood, physical strength, and so far as it has been in my power, nerve poise and mental balance."

Improve Heritage for Future Generations. "Oh yes," you say, "but heredity goes away back; and, no matter how good the father may be, the child may inherit some terrible trait from his grandfather or from some great-great-grandparent." True, but in this question of ancestry the good heritage must begin somewhere; and surely this baby will be better off if his father is what he ought to be. Should father lose all interest in the race because he has already been assured of a place in it? No potential father can live to himself as far as the race is concerned. The better we can make ourselves, the better will be our posterity; and what right have men or women to take toll of their children for their own selfish pleasure or lack of self-control? Duty is a stern word, a stern master, but we cannot evade it; and who, in his better moments, wishes to do so? See chapter 5.

Research work done with animals has shown that nutritional deficiency or a defective health program which may not bring about any evident deleterious effect upon the animal itself may produce in the offspring a condition of lessened vigor with decreased fertility. The third generation of these poorly fed creatures are still weaker, with offspring less able to reproduce normally until, as the generations continue, the strain finally runs out.

In other words, the children pay a greater penalty than the parents for the shortcomings of their parents. So health becomes a racial duty.

Conditions of Health and Disease. How important that every man contemplating fatherhood and planning for marriage take inventory of himself to see if he has the physical background that will insure the best legacy to his child! While

chronic disease, such as tuberculosis, is not directly transmitted to the offspring, yet the child born of a tuberculous father cannot be expected to have the inherent vitality and strength of nervous system to battle his way through life that he might have had if his father had been well and strong. It is only chance if an ailing, chronic dyspeptic bequeaths a good physical heritage to his child. Any condition of the father that keeps him from robust manhood may in some way take its toll from the child born of him.

And then there are the diseases *gonorrhea* and *syphilis*, those which, most directly of all, leave their scars with the innocent. Very often do we hear the truth that one third of the blindness is due to gonorrheal infection of the babe at birth, and yet how carelessly do young men, expecting some day to be fathers, lay themselves liable to this disease! It would seem that the least amount of forethought would be an absolute safeguard to any young man against a disease that may not only maim his child, but in all probability will tend to make his child's mother an invalid and much less able to do her important work of rearing the child. Sex irregularity is a moral wrong, one of the great sins against which the Decalogue speaks; yet how can its heinousness be understood except it be by the thought of its evil consequences to one's children? "Shall I give my first-born for my transgression, the fruit of my body for the sin of my soul?" Micah 6:7.

No man who has ever had syphilis can know of a surety what kind of child will be his, and what will be the marks of this disease in his child, either at birth or in after life. Could any nobler motive inspire any man than to keep himself pure for his children's sake? And, instead of hushing the word and barring the discussion, why should not our boy be intelligently instructed and trained to the thought of the sacredness of his potential fatherhood and his responsibility to it? Why should he not be carefully instructed, that he may evade the snares that are set for his feet? Why should he not be safeguarded by an intelligent attitude toward life, its privileges and pitfalls? If he has had careful instruction, if his ideals are fixed, there will be little danger of his contracting a disease that will spoil his life and the

lives of those nearest and dearest to him. This is no time for ignorance, and parents themselves should be thoroughly informed, that they may pass on to the potential fathers in their homes the knowledge that will be their safeguard from a disease that might be worse than death.

Forethought for Future Children. The man who takes upon himself the responsibility of marriage and fatherhood should think well as to what he has to give his child after its birth. But just as many rush into marriage without plan for the future, so many a youth, immature in development and preparation, if not in actual years, thoughtlessly accepts fatherhood with no plan or thought as to the chance that his child is to have. Boys properly instructed and trained will look ahead into the future with intelligent planning, and not jump into life's biggest job without forethought. Baby's father should be one who appreciates baby's worth long before baby exists, and who, because of this appreciation, will not neglect to make a place for him in life's plans, so that when baby arrives there will be little uncertainty as to his having a fair chance in life.

When we stop to think that all that the father gives that enters into the fundamental physical and nervous make up of his child he bequeaths by way of an infinitesimal cell, we are awed not only by the marvel of heredity but also by the magnitude of the responsibility involved in the power and privilege of fatherhood.

The Baby's Mother

Importance of Motherhood. Perhaps nothing is quite so important as baby's choice of a mother. Mother is to be his constant companion, caretaker, and educator for at least the first decade of his life, after which father may be called in to take a hand; but, even so, mother will continue to be, for some time to come, his most important adviser and confidante. And while we talk a great deal about "like father like son" and "a chip off the old block," yet what mother is and knows and does determines to very great extent what John or Mary turns out to be. So even though we must put up with a few shortcomings on father's part, let us select for baby a mother who is just pretty nearly perfect.

Early Training. It is a very great responsibility for us mothers to carry, but we will study and do the best we can, realizing that the first and most important duty of every mother is to give her children the best and most intelligent care that is in her power to give. And because we feel so greatly the deficiency in our early preparation for motherhood, it is easy for us to realize how important it is that we begin right now to give our daughters proper training, that when they come to be mothers they may have the advantage in knowledge and preparation that we did not have. We will see that our little daughter is thoroughly taught in regard to general anatomy, physiology, and practical hygiene, that she may be intelligent as to the care of her body and the importance of keeping it in as nearly perfect condition as possible, not only because of the resulting comfort and pleasure in living, but because of the great satisfaction and joy that await her in later years of filling well her place in the scheme of life.

She will early learn all the arts and crafts of home making and domesticity. During the early years, when she is most enthusiastic about home making, she will learn to be mother's helper. Cooking, housekeeping, and associated duties will become familiar things to her. In principles of healthful cooking,

proper diet, and home hygiene as related to herself and the various other members of the family, she will be well versed; and as she reaches the age of adolescence there will be talks now and again that will help her to realize that her physical condition will not only have its direct effect upon her own health and happiness, but upon those for whose existence in the world she may in after years be responsible. No nobler aspiration can actuate any girl than the thought of keeping her body pure and strong for the sake of those who may some day call her mother. Our girls need many safeguards these days, but this is one of the surest. Daughter should be taught the structure of that part of her body in regard to which women are so commonly ignorant, and, in learning this, she will have added respect for her physical being and a higher regard for her duty to herself.

Special Preparation. During her teens, it would be well if every girl could receive, along with her lessons in domestic science, special training in the care of children. For whether or not she ever has any of her own, why should she be the type that has theories and ideas many, but real training and practical experience none?

May we hope that the time will soon come when every girl during her high school or academic course and even earlier, may receive something of this important phase of education? ¹ Mothercraft, the most important work of all, is still far too often left to be taken up by those who enter upon it without any preparation, it being supposed that mother instinct and intuition are the only essentials for success. No more can a woman be a proper mother without special preparation than one can be a master workman at dressmaking or plumbing or school teaching without training. In order to be successful in this great work of child rearing, mediocrity is not sufficient. With so much involved, no standard can be accepted but the best. And since motherhood is the destiny of almost all our girls, no one knowing the exceptions, there can be no more important subject in the curriculum than that of preparation for intelligent motherhood.

¹ Fortunately, this very thing is already being done in many of the best high schools of the country. No doubt this line of training will come more and more to be considered an essential in an all-round education for girls.

But let no mother depend upon the school to give this instruction to her daughter. There are interesting books that can be read and studied at home by mother and daughter together. There are lectures and courses of study on child welfare and kindred subjects of which Mary may have the benefit from time to time. The neighbor's baby may at times serve for practical demonstration, unless Mary is so fortunate as to have her own tiny brother or sister, nephew or niece. Mother herself being informed, will in her own way, as time and occasion permit, be able to pass on to her daughter very definite and interesting information, until Mary gradually comes to be familiar with principles underlying the care of the child, and child culture takes its proper place in her mind as a part of domestic science and home making.

Physical Fitness. It is well for baby if this mother-to-be of his has led something of an athletic life; if she has been an outdoor girl with such things as hiking, swimming, gardening, tennis, as part of her health-getting program; if her skin is ruddy, her muscles hard, her eyes bright, her whole being in a glow of health. This daughter who is being prepared for motherhood will have the advantage of the physical life that will bring her nearer the ideal of perfect health and strength; and when she leaves her teens and the time draws on when she may think seriously of marriage, she will continue the active muscular exercise that will help her to keep the strength that she has developed. If her work is such that she is much indoors, she will take special pains to plan regular exercise. She will hike or swim or engage in some other out-of-door activity, say, twice a week. She will feel that to do this in spite of the stress of work in the office is something that she owes not only to herself but to any children that she may have. After she is married and has a home of her own, she will still continue a regular program of muscular activity of the kind that will maintain her health and strength, and keep her young and beautiful for her baby's sake. Thus her desire for beauty comes to be not a mere selfish desire, but one lifted to the plane of love for others and for efficiency in service. Such a mother-to-be will take a great deal of satisfaction in understanding the principles of proper eating, proper

dressing, and all things that have to do with keeping her general health up to the very best possible standard; and with such a foundation and such ideals, she will give to baby, both before and after his birth, those things that will mean the most to him all through the years. Let us all help baby to choose just such a type of intelligent womanhood for the inspiration and guidance of his early years.

Controlling Influences

The Privilege of Living. To be or not to be, that is the question; and one that baby cannot decide for himself. The privilege of being—of what inestimable and priceless value! It is only the utmost extremity of despair that has ever made the human soul to wish, even for a moment, that he had “never been born.” The “struggle for existence,” so tenaciously carried on, is seldom given up while life lasts, so desired a blessing it is just to be. It is as well perhaps that it is not left entirely to human judgment just what baby shall be or just when he shall be born.

In this ease-accustomed and ease-loving age, there are fewer and still fewer who would choose to take upon themselves the burden and responsibility of many children. One, perhaps two, possibly three, are the number of children chosen in homes where the automobile, the commercial laundry, the vacuum cleaner, the bakeshop, and many labor-saving devices make life very easy, as far as actual living and home keeping are concerned. Quality rather than quantity, they say. But we fail to see in the smaller families of to-day better quality than seems to have come from the larger families of a generation or two ago. We still find enough instances of splendid quality in the occasional large family to raise the question as to just how this thing is working out after all.

Propagation Among the Unfit. There are the unfit who should not propagate; there are the sick who cannot with safety to themselves or to their offspring. There are times when social conditions make child bearing a tragedy. Certainly there is a place for birth limitation, for what is called birth control. But we must leave to the doctor and to the social worker the problem of these. Our message is not for them.

Aim of the Founders of the Home. Much depends upon the viewpoint of the founders of any home. If they are making a home simply that they may have an easy and pleasurable existence, that they may live in the present with little thought

of the future, then, of course, the fewer children the better, perhaps one or two—just so they can have had the interesting and pleasurable experience of at least one child, like a trip abroad; they can say they have been over. Yes, they want all of life; and, since a child or two is a part of life, they will accept graciously a small family. But to have two or three and then more, up to five or six—well, that's a calamity; and the poor mother is commiserated, and the whole family, especially if life goes a bit hard and economy is necessary, is looked upon with a pity that holds an element of disdain. When it comes to the hard work of contributing to the race a goodly number of children with the right heredity—oh, let the other fellow take that responsibility! "Why don't the Browns have children? They're pretty well fixed."

But if, perchance, two people should be married, and consider their biggest and most inspiring joy to be that of rearing children; if they should feel that in marrying they were about to take up the profession of parenthood, that of all things in life beautiful children would be that most worth while; if they should feel that the reduplication of themselves in their children would give to them the greatest possible returns in real happiness and satisfaction, returns that would come back to them all through the years; if they should appreciate parenthood as the thing that has in it the greatest possibilities for the development of strength of character, that assures most in the way of richness and beauty of living; if they should stop to consider that the love of children is the one thing natural to the human heart for which men and women will give unstinted service and the ultimate of self-sacrifice and devotion,—if, with these thoughts in mind, they should establish a home, they would not feel that having children could in any way interfere with the comfort and satisfaction of their lives together. They would not look forward to the time when, the task of having children over, they might live; but they would feel that the having and the rearing of children was living of the very highest and most satisfactory kind. And, because of this mental attitude, they would be very keen to find the way to take care of that extra baby when it came along. What people really want they can usually manage to take care of. As a mat-

ter of fact, with all the home machinery going for family routine, it is surprising what little difference in real work an extra child or two need make. The advantages far outweigh the disadvantages. The difference is in the mental attitude of the home makers as to just what constitutes real life. The late Dr. Mary Lawson Neff of the University of California Extension Department, said in addressing a convention of club women: "Every child has a right to grow up in a family of children. Better a big family of children—both for the world and for the children—with a high school education, than only a child or two, and these put through college." What people need most to learn is an economic system of home management that simplifies and lessens care, without detracting in any way from desired results. In such a plan the children give as well as receive, and by their giving receive the more.

A Requisite for Happiness in Marriage. But in spite of all this, can people in any way be masters of themselves and of their destiny as far as children are concerned? After all, what constitutes happiness in married life? Ideally, people marry for two reasons; first, for comradeship and enjoyment in each other, and second, for the sake of children. Children are not a foregone conclusion, nor, desirable as they are, are they an essential in every case to a happy marriage. But comradeship and mutual enjoyment are ever requisites for a marriage that would yield true and satisfying happiness. Without something of this, no matter what else there may be, there is sure to be an unrest, an aching void. But true comradeship is the thing that is sorely lacking in many married lives. Real friendship and joy in each other's society is rare in the married state. And where the high plane of friendship is not reached, there is little left but the physical relation to hold husband and wife together. Often only on the physical side is there anything akin to the mutual attraction that somewhere in married life must find a place. Nowhere else is there anything in common. When this is true in any marriage, physical mutuality takes on an importance that should not be ignored.

It cannot be gainsaid that the physical phase of love may even be the means of making stronger the spiritual side; that often-

times its tenderness is the balm that heals the wounds of misunderstanding and nervous friction. And where there is so little of mutual sharing, the one thing that breaks down the barriers of reserve and calls emotionally for the giving of each to the other cannot safely be thrown aside. It is well for the family state as a whole; no doubt, that there is the biological call; but never can the greatest happiness depend purely upon biology or physiology. People do not get the most of enjoyment out of eating if there is no thought but for the purely gustatory pleasure.

In a truly happy marriage there is companionship in things other than purely physical, even though nature has her way, and children are born. While the physiology of marriage does play its important part in assuring happiness, yet in a mere physiologic marriage there can never be complete satisfaction. Even the children that follow in normal sequence may only tend at times to increase the bitterness that so easily results from such a union. In a marriage where the only companionship is physical, the only intercourse sexual, the only union physiologic, even these tend in time to become sordid, a cause of dissatisfaction, a root of bitterness. Pleasure in physical companionship can be lasting and satisfying only as it blends with, and is reinforced by, the mental and spiritual.

Happiness as Well as Idealism. The more extensive the common sharing, the more the lines of common interest, the greater the understanding and friendship between husband and wife, the less of dependence does there need to be placed on the sex relation; and the pleasure in each other so essential to happiness must come sooner or later to depend upon a common interest in things mental, spiritual, yes, and intellectual. Only so far as this becomes true in any individual married state will ideal birth control be possible. And so it follows that only in the happiest marriage, where there is the most of joy and comradeship, respect and mutual helpfulness, will it be possible to reach the ideal as regards this control. If every man and woman about to marry or having married would realize this and endeavor to develop a common interest for themselves, between themselves, but in something apart from themselves, they would reach an ideal in marital happiness known by few; and they

would at the same time find it more nearly possible for them, to become dignified masters of themselves and of their marital destiny.

Marital Happiness. The happiest marriage surely is the one where such mental and spiritual relations are attained, no matter how many or how few children there are to be. And the happiest marriage is the one where the two who "walk together" are agreed mentally, spiritually, and physically, where the greatest joy and satisfaction is reached by traveling together in fields of study and of spiritual vision, and where the properly controlled physical relation may place its affectionate seal upon the whole, with only welcome for the child that may come. With such a marriage state, I hold that there need be little fear that providential care will not be over that home and the children that may come to gladden it.

The marriage relation is beautiful, and conducive to happiness only when controlled. Rarity increases its joy. Subject only to impulse, it ranks with gluttony, and leaves little upon which to base happiness or mutual love and attraction. We hear much about continence, and this word will bear study. Look it up in your dictionary. But again I say that the proper control and limitation of the purely sexual relation is dependent in a very great degree upon the ability of the husband and the wife to sublimate it in a mutual spiritual and intellectual correlation; and the beauty of it is that the very thing that permits of this control gives the true and abiding happiness for the lack of which men and women suffer, homes are broken, and children lose the beneficent environment to which their entry into this world entitles them.

Friends or Critics, Which? So be you young or old, plan in some way to be a friend and companion to that husband or that wife of yours. Cultivate that sympathetic friendship, which, between husband and wife, is of all things most rare. Study to be something more than a mere physiologic mate. Do not always talk shop, and iterate and reiterate about the care and anxieties of the day. You would drive any friend away from you by such an attitude; and how can you expect thus to hold the one who means the most to you in real happiness?



KEYSTONE

Six months of proper diet, exercise, and sleep have done much
for this young man.

Husbands criticize, and by this criticism hurt their wives more than any man can know. Wives retaliate in criticism, and "rub it in" by constant nagging until the situation becomes intolerable, and love, to all appearances at least, flies out of the window. If that be the situation in your home, plan with your mate to do something together—together, I say—that is really worth while. Try it one-half hour a day, it may be after the youngsters have gone to bed at night. Interest yourselves in something of an intellectual nature. Read something in turn one to the other, something entirely apart from your daily routine and care, something beautiful and helpful. Begin the study of French or German or natural history. Or study literature. Acquaint yourselves with some author and his work. Study any one of the many things in which you might be interested; study and grow and admire the new ability and helpfulness you see and feel in each other. Why should people cease to grow just because they are married? Twenty minutes a day, if that is all that is possible, will accomplish much if persisted in, and, if done together, may lend a saving interest to daily companionship.

Plan other things, sometimes with the children, but sometimes *without* them. Save for yourselves two hours a week or a day a month to do "something different," something that will lend zest to life and improve your body and soul. Do not belittle the quiet quarter or half hour of Bible study and prayer together after the children are in bed. These are only suggestions; but it may be difficult, without some such program, for you in self-mastery to lift your marriage above the commonplace, and thus assure and increase the joy of comradeship without which marriage and children and home are all but failures.

Heaven's Gift. As to the sex life of any married pair or the limitation of children if need be, these are things that must be left to individual husbands and wives to work out for themselves, with advice when necessary from those authorized to give it. We are only endeavoring to hold up ideals of happiness that will have a bearing not only on baby's existence but upon the environmental conditions he may find when he arrives. Consecrated to life's highest ideals and with love for each other,

every man and woman may work out his own salvation. We only beg that when it is found that baby is on his way, even though not quite according to plan, his announcement be hailed with joy, and he be welcomed as a gift from heaven. And if the baby comes again and yet again, let it be that in the abundance of treasure thus so freely bestowed, this man and woman may see the evidence that their life's work was meant to be that of presenting to the world for its service a reproduction of themselves that will be as much finer than they as their added knowledge and their appreciation of their great privilege may make possible.

SECTION IV

Getting Ready for the Baby



The mother should plan her program so that she will have plenty of rest.

The Mother and Her Care

Anticipation. But at last nature makes the thrilling announcement that baby is on the way, and mother is face to face with the fact that a new life is to be, for which she is from this time on responsible. What is she to do? The baby is hers. It is already subject to her care, and, no matter what may have been her failings or unpreparedness in the past, she must now give special attention to the child developing in its human cradle. No matter what has gone before, the nine months preceding baby's birth demand careful consideration and planning, that there may be supplied to the new being those things that will give it the best chance for proper development. There may be times in the hustle and hurry of life when mother may be a bit careless about her general health and when she may, for the sake of others, neglect to keep herself on the highest possible physical plane. But she cannot afford to let this period be one of those times.

More Rest. One of the first things that the family should insist upon and plan for is that mother have plenty of rest. This does not mean that she should stop work and do nothing. She may go about her usual duties, if they are not too strenuous, but her nights of rest should be long. Instead of eight hours' sleep, she should plan on at least nine—more if she feels the need of it. It will be very helpful if she can have, sometime during the day, a period of quiet and relaxation to the extent of lying flat on her back for thirty minutes or more with her eyes closed. This can usually be accomplished if plans are carefully made for it, no matter how hard it may seem at first thought for her to find the time. She should be saved, so far as possible, from unusual worry or excessive strain. She should at this time of all times cultivate a serene and trustful frame of mind. This may often seem difficult to do, especially if daily care and hard work cannot be avoided; but, doing the best she can, she should with confidence place herself in the keeping of the One who has promised to mothers His special care.

Exercise. Exercise as well as rest is of great importance. A mother who is accustomed to exercise need not feel that she must discontinue this because of her condition. If she has been in the habit of swimming, hiking, and tennis playing, these do not need to be omitted, but modified somewhat to suit her inclination and her ability to avoid a sense of fatigue or over-exertion. As a matter of fact, women who continue some such exercise as this during pregnancy are most likely to have the strong muscular system that will stand them in good stead when the time of delivery arrives.

It is well for the average woman who has not had the privilege of such out-of-door exercise, to plan some exercise that will tend to strengthen her muscles. Any set of exercises that she can carry out without feeling a sense of too great strain will help to accomplish this. Walking is always good. And during the later weeks, when many forms of exercise become difficult, walking can be relied upon to prevent the muscular softening that otherwise might result from inactivity.

Exercise taken in a reclining position will accomplish much and at the same time give relief from the more or less constant upright position that many mothers find it necessary to maintain during their waking hours. Lying flat on the back, lifting first one leg and then the other to right angles with the trunk, keeping the legs straight and toes firmly extended, is a good exercise. This becomes rather more effective if when one leg is being raised the other one is being lowered, and still greater muscular development results if, without too great strain, both legs, toes outstretched, can be lifted to a vertical line at the same time. Lastly, if it can be done without too great an effort, let husband hold the ankles firmly to the floor while mother-to-be, with arms folded across her chest, lifts herself from the lying position to that of sitting.

Again, lying flat on the back, separate the legs as widely as possible, then bring them together, and repeat several times, being careful to stop before experiencing a sense of excessive strain. Still lying on the back, with feet together, flex the knees, bringing the feet close to the trunk. Next, separate the knees widely, then bring them together, doing this several times. Or, with knees flexed, lift the hips until the body line from knees

to shoulders forms a gradual inclined plane, then back again, repeating several times. And again, with knees flexed, lift hips to the inclined plane, separate knees widely while in this position, bring knees together, lower hips. It is well to do this to the count of four: 1. Raise hips. 2. Separate knees. 3. Bring knees together. 4. Lower hips. A modification of the rolling exercise is also good. Lie on the floor (and any of these exercises can be taken on the floor), fold arms or clasp hands in front, turn to one side almost on the face, then back again on the other side, repeating several times. Remember that, while these exercises are all good, if any one of them gives discomfort, it may be omitted.

Baths. Bathing in the right way is not only a source of cleanliness but has a definite tonic effect especially beneficial at this time. The tepid or lukewarm bath has no advantage except that of cleansing. A warm or a hot bath stimulates the body to no reaction, and, if continued over a period of time, tends to enervation. The cold bath, taken by itself, may be too strenuous. The bath that will give the best results is usually the one in which the individual sits in hot water for a few minutes (water hot enough to bring a pinkness to the part of the body that is submerged), then, after letting this water out of the tub entirely, or nearly so, turns on the cold water, finishing the bath with a thorough cold splash, rubbing the entire body well with the cold water. This is the bath that will start the circulation, leave one in a comfortable glow and with a sense of physical well-being. This type of bath will also increase the pliability of the muscles so intimately concerned in labor.

However, these sitting baths should not be continued during the last month of pregnancy, especially with women who have had children before. There is a chance, because of the relaxation of the parts, that there may be an entrance of water into the vaginal canal, thus making it possible for infectious material to enter the passageway. During the last month the position in the bath should be such as not to facilitate this entrance of the bath water into the vaginal canal. It is well if a shower can replace the bath. But in the absence of a shower, a hot soap sponge can be taken in a squatting position or on the

knees, using a pail to pour the water. Splashing from the faucet, first hot and then cold, may take the place of the shower.

Later Months of Pregnancy. During the last three or four months of pregnancy, the daily bath should be followed by a thorough rubbing of warm oil into the skin of the groins and lower abdomen, this again to increase the resiliency of the tissues and muscles that will be subject to stretching. Some such special care should also be given to the breasts—especially during the later months. If heavy, they should be supported by a properly fitting *brassière*, or breast supporter, one that will lift but not bind. Once or twice daily they should have the following treatment: The nipples should have an application of equal parts of alcohol and boric acid solution, or of witch hazel. This should be allowed to dry in for about five minutes. Then warm sweet oil should be thoroughly rubbed into the tissues of the breast and nipple. This will help to prevent the pain and distress of cracked nipples when nursing time comes.

Unless there is a great deal of muscle relaxation from previous pregnancies, there may be no need of an abdominal supporter during this time. Abnormal conditions resulting from previous pregnancies may make a support of some kind necessary. The physician in charge should decide as to this.

Dress. With the free, easy dress worn by the woman of to-day, it has never been so easy as now for an expectant mother to wear clothing the lines of which are graceful and beautiful and that tend to mask rather than to accentuate the change in body contour. It might be well to add, however, that a woman should not at this time overtax her powers of resistance to cold by wearing, in cold weather, the small amount of clothing that is often worn these days, even during the cold months. Proper protection of legs and ankles is important.

Medical Care. While every expectant mother should understand the general principles of proper care during the prenatal period, yet there is no general instruction, no matter how carefully given and carried out, that will make it safe for her to travel this way alone. The importance of immediately placing herself in the care of a competent physician, we cannot over-emphasize. There are conditions and complications that may

and often do arise during pregnancy that only a physician can recognize and treat, and, if unrecognized and untreated, may mean the sacrifice of mother or child or both. Pelvic measurements, routine urine analyses, blood pressure determinations, and regular examinations tell the physician from month to month the conditions that may call for treatment and special instruction. And let it be assured that the physician engaged is one who is particular to make these routine examinations at regular intervals. Thus safeguarded, the expectant mother has little to fear.

Antenatal Exercises. (By Kathleen O. Vaughan, M. D., in London *Nursing Mirror*, February, 1943.)

1. Deep breathing with arm raising, twenty-four times daily, to improve circulation in both mother and child, and to prevent the usual stoop as abdomen enlarges.

2. Leg swinging, from the hip, knees straight, eighteen times daily, to increase flexibility of hip joints and tone up abdominal and gluteal muscles.

3. Hollow back. Both hands on chair back.

a. On tiptoe, face looking to ceiling, back hollowed.

b. On heels, face looking to floor, neck and spine rounded.

Ten times daily to promote flexibility of whole spine, sacroiliac joints, hips, and ankles.

4. Squatting period with knees apart.

a. On toes, knees wide apart, face raised, back hollowed.

b. On heels, head down, back rounded.

Ten times daily to increase flexibility of spine, hip joints, pelvis, and ankles, widen pubic arch and stretch perineum.

5. Stair stepping. Feet together, raise right foot, extend backward, pointing toe. Bring forward and bend up to chest. Repeat with other leg—each three times daily. The object is to strengthen the gluteals and prevent the flabbiness and spreading of the buttocks commonly seen after childbearing.

6. Tiptoe walking. Arms raised, with shoulder and wrist movements as if flying. Take small steps, springy and flexible as if dancing. One hundred steps daily tones up and improves arches of feet, tones up chest muscles, develops and makes the breasts firm.

7. Pelvic arch and pelvic floor stretching. Sit on floor, knees drawn up, palms together and elbows to inner side of knees which are to be pressed apart. Count one, two, three, as knees are pushed outward with three pushes each a little farther than the last, finishing up with soles of feet together. Done twenty times a day this improves flexibility of hips, stretches pelvic arch and floor, and makes muscles of perineum more elastic.

The Mother and Her Diet

Food for Two. If mother has been eating correctly, the fact that baby is on his way may not need to make a great deal of difference except that, as development goes on, she will need to eat more than if she were living a physical life only for herself. She must now live for two instead of for one, and building material for the new baby's body must be supplied as well as that needed to keep the mother's tissues in repair. The trouble is, there are so very many who do not understand the principles of correct eating that the chances are there will need to be some very definite attention paid to this question at this important time, else baby will suffer in his growth and development.

It is a matter of common note that during pregnancy the teeth tend to soften and deteriorate. "A tooth for every child," they say. In such a case, the lime intake in the food is too low, and the demand for the child's needs is so great that the mother's lime-containing tissues are drawn upon to supply the needed material for the child. It seems that this time, when a new life is being formed, the importance of prenatal supply and complete development is such that nature will sacrifice the mother's tissues and strength for the child. The need of the child at this time, it seems, transcends all others. We cannot, however, bank on this in thinking of the child. Even at the best, and with the greatest drawing upon a mother's tissues for the upbuilding of the new life, if there is a lack in the supply, there is liable to be a shortage that may manifest itself somewhere in the child as the months and years go by. Carious teeth, lack of stability in the nervous system, poor resistance to disease, and other untoward conditions that so often manifest themselves in later years, are undoubtedly due many times to failure in the prenatal nurture of the developing child. And a poor chance has baby if he finds at birth a mother who is already bankrupt physically because of his demands.

Food. There are four classes of foods that are especially essential for the mother at this time. 1. *Fruits* in abundance, for their vitamins, their alkalinizing salts, the tonic effect of their acids, and the bulk of their cellulose. 2. *Vegetables*, for their lime and iron and other salts, for the valuable proteins of their leaves, for their vitamins and cellulose. 3. *Milk*, the important building food, supplying both protein for soft tissue and lime for teeth and bone. 4. *Whole grains*, with their important vitamin B, for energy food in easily appropriated form, most commonly and most satisfactorily used in the form of breadstuffs and "breakfast foods." In the proper proportion, the above quartet of foods will supply the dietary needs. Extra calories of energy food and variety may be supplied by the use of such *accessory foods* as nuts, olives, honey, dates, raisins, avocados, cream, butter, jellies, jams, and desserts. The best accessories are those that come in a natural form. For example, honey is better than too much in the way of jams and jellies, and cream is better than much butter. The amount of accessories or "trimmings" depends largely upon mother's need to gain or lose in weight, and should rarely displace the members of the important quartet of foods given above. A suggestive daily menu follows:

Breakfast. Fruit, some raw when possible, but also stewed and dried if desired; milk, pasteurized or boiled, or cooked in foods; breadstuffs and cereal foods, as toast, muffins, rolls, mushes, dextrinized cereals—the amount of these depending on the mother's weight. Fruit and milk are the foods often neglected, and they are the most important, for they supply the building material, vitamins, and alkalinizing salts so necessary at this time. When "morning sickness" or digestive disturbances common to this period cause lack of appetite, the breakfast may well be simplified, for a time at least, to fruit (perhaps as fruit juice one half hour before breakfast), crisp toast, and hot boiled milk; but as the appetite improves, the fuller menu should be allowed.

Lunch or Supper. This meal may be much like breakfast, with a free amount of fruit or raw vegetable, or tomatoes raw or cooked, or any two of these; milk in some form (cottage cheese or buttermilk is a healthful variation, or perhaps a milk

soup); such cereal foods and breadstuffs as the appetite seems to call for, taking care that the fruit and milk are not crowded out; nuts, olives, dates, raisins, and honey are the simple, natural knickknacks that help to make the meal attractive and add essential calories. But don't add enough of these to cause too great gain in weight.

Dinner. This is a vegetable meal rather than a fruit meal, and the important vegetable adds again the alkalinizing salts, vitamins, and complete proteins. It is well to have vegetables raw as well as cooked, and vegetable soups are always good. But to the vegetable part of the meal, a more definitely protein food must be added, as milk, or some of its forms---cottage cheese, buttermilk, milk soups, boiled milk. Legumes and nuts are very good substitutes for milk, and may be used in connection with leafy vegetables. Legumes are palatable, and often digested with more ease by the expectant mother if served in the form of soups and *purées*. The nuts that give the best protein value are almonds, peanuts, and Brazil nuts. Almonds are not improved by blanching, as is usually supposed, but are better eaten in their natural form. Peanuts, because of their concentration, should always be used moderately. In the form of peanut butter, the concentration may be decreased somewhat by stirring it into a cream with water. The water is added gradually, and the stirring continued until a creamy mass, about the consistency of whipped cream, is formed. This is also more digestible, and may be used in various ways. It is well, however, to add a drink of milk for good protein measure. One advantage of milk over other protein food is that it may be relieved of its concentration by skimming and at the same time retain its valuable proteins, so that the extra fat may be used or not, depending upon mother's tendency to gain or to lose in weight. Skimmed milk contains as much protein and calcium as does whole milk. The protein at this meal may be supplied in the form of eggs. Meat, if used, may be served at this meal as a milk equivalent. But the protein of milk is a far better form for the expectant mother and her developing child than that of meat. If potato is served at this meal, or other starchy food like macaroni or rice, very little if any bread is necessary. Desserts or "trimmings" and accessories as previously men-

tioned may be added in moderation, depending on the mother's need, as evidenced by weight, strength, and appetite.

Digestion. For a mother who has a poor digestion during this prenatal period, a very simple diet may be required, but it must be one that will fulfill nutritional requirements. The diet may be as simple for a time as the following: *Breakfast*: Fruit, toast, hot milk, with or without an egg. *Dinner*: Cooked or raw vegetable, including baked potato if desired, milk or cottage cheese or buttermilk, or *purée* of bean or pea or lentil soup, with toast. *Supper*: Fruit, cereal gruel or toast or both, milk, and, perhaps, honey or dates for extra sweet. An extra drink of milk at bedtime and a glass or two of fruit juice or vegetable broth during the day may make this simple diet plan all-sufficient. An eccentric, fickle appetite may be due partly to a poorly poised sympathetic nervous system, but also to a lack of certain essentials in the food supply. By attention to these few simple principles of proper feeding, this lack may be avoided.

Overweight and Toxic States. With a properly balanced ration, the appetite is a fairly safe guide, but care should be taken that concentrated food is not eaten in such amounts as to cause the mother to gain too much in weight. While some gain in weight is to be expected,—the normal increase being about one thirteenth of the body weight,—yet the extreme gain so often seen, with pudgy face and thick lips, is an excess that places too great a handicap at this time of special tax upon the body's regulating processes and eliminative resources. In a case such as this, while there should be an abundance of fruit and vegetables, at least a quart of milk a day, and some whole-grain bread, yet the concentration of the food supply may be lessened by taking the milk skimmed or as buttermilk, and by limiting the amount of fats and sweets. It is usually a good plan for every pregnant woman to add to her daily diet extra vitamin B complex in the form of tablets, capsules, or as yeast tablets or powder. Cod-liver oil in some form should be added to the program. Calcium and iron are often valuable helps, and many physicians prescribe them as a routine.

If every pregnant woman would carry out an intelligent dietetic *régime*, the toxic conditions and kidney complications that

are all too frequent during this period would become comparatively rare, and the prenatal period would become a time of greater comfort for the mother and far more propitious as far as baby's start in life is concerned.

Constipation. Constipation is a common condition during pregnancy. The right diet will do much toward correcting it. Abundant fruit at two meals of the day, and an extra fruit drink at least once between meals, will often give desired results. There are times, however, when a little extra help may be needed. If an enema is necessary, one of flaxseed solution is better than an enema of plain water. This, while moving the bowels, leaves a slimy trail in its wake, which simulates the natural mucus of the membranous lining, and helps to overcome any irritation that may be present. This enema is prepared by boiling flaxseed in water to make a slimy solution. The usual amount necessary for an enema should be used.

Medical Care. Again we would stress the importance of the expectant mother's placing herself in the hands of a competent physician as soon as she realizes that she is pregnant. She may go to a private physician, or, if this is not practical, she may avail herself of the privilege of the nearest prenatal clinic. These clinics and welfare stations are being established in nearly all communities, and such leave little excuse for any woman's not having the proper care during this important time in her life. Only in the plan of careful supervision is there safety. The responsibility is too great for anyone to attempt to carry it alone. But, with the right hygienic program, the complications of pregnancy will be very few. And the mother, with a safe-conduct through the nine months of waiting, may look forward with confidence to baby's safe arrival at its close.

The Baby's Clothes

Stitches of Love. What is more fascinating than getting these little things ready? We know baby is coming; mother is being properly looked after and advised, and little by little as she has time and inclination she can plan and prepare, that everything may be in readiness when baby arrives. Naturally, the first thing to consider is baby's clothes, for the little tad must have something to wear. And what a delight it is to plan these tiny things. With the same intense interest and pleasure with which we look over the maiden's hope chest or the bride's trousseau, do we survey baby's layette when it is at last complete. The lovely, exquisite things, so soft and dainty,—the little shirts, the stockings, the darling bootees, the tiny shoes, the petticoats, the embroidered dresses, nightgowns, kimonos, the fluffy knitted jackets of daintiest hue, the bonnets, the silken coat. Everything, from the pile of softest diapers to downy blankets, quilts, and bassinet, breathes a fragrant anticipation of the baby to come, and evidences a wealth of love and welcome from mother dear and hosts of anticipating friends.

But, after all, so much work,—loving work though it is,—so much time, and often so much money, for the baby who would be quite as happy, quite as content, with more simple, plainer, and often fewer things! Just so he is comfortable and clean that is all he cares; and, after all, a clean, plain baby is just as sweet and lovely, even to the casual eye, as the beruffled and beribboned one. We are coming to realize that time is such a valuable thing that there may be far more important tasks than that of embroidering a tiny slip, work of art though it may be. If one can have the essentials and the embroidery too, it is, of course, all right. Let those who can and wish, have all these delightful things for baby; but how about the tired mother who, loving her wee one quite as much as any, has heart and hands full with work for others just as precious, and little time and money to spend on anything save the needful things?

Baby's Needs. Let us see what baby really does need, and how simple and easy it all can be, and still give baby the best possible chance for health and growth. In so doing may we not solve the problem of the mother who wants her baby, but can hardly see her way clear to give it proper care and carry her many other burdens? Might not large families be less of a problem and mothers have more time for spiritual companionship with their children, with opportunity to retain their own fleeting youth for their children's sake, if the question of baby's clothing and care could be simplified?

There is one thing of which baby must have plenty, and that is *diapers*. With these there is no economy in skimping. Let us plan on four dozen outing-flannel diapers, twenty-seven inches square. See illustration on page 126. Or they may be made or bought in the elongated triangular shape. Paper diapers are now coming into use. Then the *shirts*. These will be four, and of cotton. Let those have silk who can and wish; but there is no reason at all why baby's tender skin should be irritated by the presence of wool. Cotton shirts are the most comfortable and practical, and are inexpensive.

If by the age of two or three months baby will be a summer baby, it will be well for him to have three or four little knitted sleeveless shirts to be worn during the hot weather. *Stockings*: four pairs, and also without any wool in them. As for *bands*, let us remember that these are necessary only as a means of holding in place the cord dressing, and that when the cord stump drops off and the wound has thoroughly healed, there is no need for any band to be worn around baby's abdomen. This means that by the time baby is two or three weeks old bands are in the discard, and so no great preparation need be made for them. Often no band is needed by the time baby gets home from the hospital; and, for the week or two that it might be necessary, soft strips of muslin or cheesecloth will do quite as well as any fancy band with embroidered edge. If something more substantial is desired or needed, a soft, yielding band may be made from lightweight cotton flannel torn into strips twelve by eighteen inches, folded lengthwise, and double-hemmed along one edge, thus leaving a band eighteen inches long by five and a half or six inches

wide. Of these, four or six will be ample, for baby's washing is never limited to the single family wash day.

Other Less Essential Garments. Meager though it may seem, the above are the only garments absolutely essential for baby through his first weeks of life, except as he may need more when out of doors in cold weather. In summer weather he may need nothing else in the way of personal garments. In his basket, protected from drafts, and with necessary blanket or downy quilt for protection during the cooler part of the day, there is little reason for more clothing. And in his freedom from bunglesome garments, baby will happily kick his way into fuller development and unhampered growth.

The garment next in importance is a *slip*, or *nightdress*, or a *bed gown*,—for baby's days are spent in bed almost as much as his nights,—which will give baby's elders the feeling that he is dressed even though he realizes little difference. This slip, to be most practical, should be made of soft material, as outing flannel.

The hands may be kept warm and the baby kept from sucking his thumb or scratching his face by making the sleeves long enough so that they may be closed over the hands with a draw string. For the first weeks of baby's life a very practical garment is the "*Warren dress*," made like a sack and shaped to the neck. Large and roomy, without sleeves, it affords perfect freedom with thorough protection. There is no lack of opportunity for vigorous activity of little arms and legs, but there is at the same time perfect protection and warmth, and there is little chance for thumb sucking.

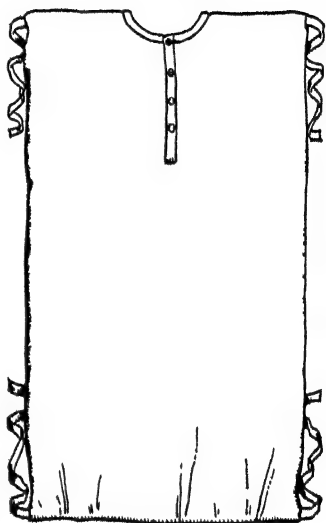


FIG. 18

A "WARREN DRESS," OR
SLEEPING BAG

The tapes at the corners may be fastened to the corner posts of crib, if necessary.

Greater warmth of clothing being demanded by winter weather, may make it seem well for baby to wear a warm *underslip*, of which two or three may be planned. These may be made of flannel. However, any extra garment about his hips is just one more thing to keep dry, and surely sufficient warmth for hips and legs is assured by the many thicknesses of diaper he must wear and the stockings it is always well for a winter baby to have on. *Kimonos* and *jackets* may be used if needed to give extra warmth; but for the tiny baby who sleeps most of the time and is in bed practically all of the time, it is quite reasonable to depend upon the soft blankets that cover him to provide him with the extra protection from cold. *Bootees* may provide warmth for the little feet during times when he is allowed to kick without covers.

The amount of clothing actually necessary for warmth will depend upon the temperature of the surrounding atmosphere, not upon custom or a subconscious notion as to the number of garments a baby should wear. In cold weather, for night, or when on a sleeping porch or outdoors, as he should often be, his sleeveless dress may be made of warmer material and become what is known as a *sleeping bag*. This may be made of blanket material or even of eider down. This is a very practical thing for the winter baby. A little square of rubber sheeting or a rubber diaper placed in the back may be used to keep the sleeping bag dry. This rubber protector may be made like an apron and tied about baby's waist, or the upper edge can be pinned to the diaper. In no case should rubber panties be depended upon for this protection. Such panties are only useful for occasion, and should not be the regular thing.

For Occasion. Although we can practically taboo "dressing up" for baby during his first three months of life, yet we would hardly feel comfortable unless he had at least one outfit in which he could, if necessary, be dressed for exhibition. This we will allow, but it should be remembered that this is for the sake of baby's folks, not for baby. His comfort and well-being are in no way dependent upon sheer embroidered slips, fancy bonnets, or ornate sacks. Of these there are, of course, no end, and we would attempt no list; but, given one or two batiste or

nainsook *dresses* with corresponding *petticoats* of suitable material, a little *sack* or *kimono*, with the conventional square of blanket or quilting, and our baby is quite ready for this special occasion, which, however, should be very rare. And please don't put all these extra things on him if the weather is hot and you yourself are wearing your thinnest garments because of the heat. As for the bonnets of which baby has usually so many, they are of little use. The outdoor baby in cold weather will need a head protection, but this should be a bonnet or cap selected for its warmth and practicability rather than for its value from the standpoint of the number of hours spent in making it. Other clothes the baby will need as the months go by, but for the first two or three months of life, there is little occasion for more than we have enumerated. Time enough for more as we see they are needed.

Baby's Bed, Room, and Other Things

Baby's Bed. Baby will need a little bed all his own. And what a marvel of lovely drapery and color, of ribbon and ruffle, of ripple and flounce, is the *bassinet* that we ordinarily see. But what a lot of thought and effort and, perhaps, of money too, are put into this exquisite, dainty bit of furniture! And to keep it as immaculately clean as everything about baby should be kept means still more and more work. And to what avail? Absolutely none, so far as baby is concerned—or anybody else, for that matter. Quite as dainty and sweet and appealing, and much more practical, is an oblong clothes basket, say, twenty-seven by nineteen inches, that can be bought for less than two dollars. This, painted and enameled white by daddy, and with a bow of pink or blue ribbon decorating one handle, is quite as delightful as the ruffled kind. Even the paint isn't necessary—or the ribbon. Very nice-looking baskets in natural color may be easily obtained, and will do duty quite as well and are as attractive if undecorated. One that is closely woven is better than one with large open meshes. Baby may sleep in a crib or bed from the first day of his life, but a basket is rather more practical for the first three months, and may be used even longer. One of the most practical things we have seen for baby's first bed is the *carrying basket*, of which we speak again later. The plain or enameled basket, with handles so easily adjustable for shading baby's eyes, or from which to suspend playthings, or to support the protective net, or to use in his transportation from one place to another, makes a most pleasing and convenient bed for the first three months. See page 115.

Bedding. The kind of bed being decided upon, the next thing of importance is the *mattress*. An ordinary hair pillow is perhaps best, or one of kapok or felt is good. A mattress may be made of unbleached muslin and cotton batting. A feather pillow should never be used for this purpose. The next thing to consider is the *bedding*. First, protect the mattress with a *rubber sheet* or oilcloth of the same size. This may then be covered

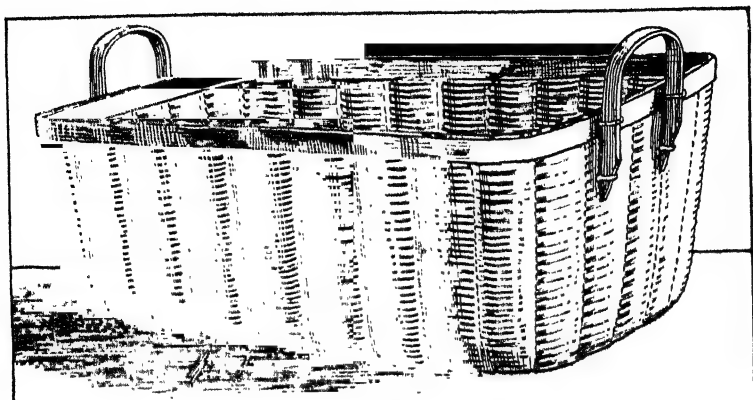


Fig. 19

THE ORDINARY CLOTHES BASKET MAKES AN IDEAL BED FOR BABY.

with a *quilted* pad of about the same dimensions. If such pads are used, there should be four or six of them. They will wash easily, and will need to be changed daily.

For this first bed large pillow cases may be used as sheets, the mattress being slipped like a pillow into them. Even the blanket may be slipped into a pillow case. Crib *sheets* will be needed later. They are best made of light-weight cotton flannel. Knitted sheets can be bought that are very practical and inexpensive. Six sheets are usually sufficient, although many say a dozen. Cotton flannel or knitted sheets may be used for underneath and muslin sheets for the top, or inexpensive cotton blankets may do duty as sheets. It must not be forgotten that muslin sheets mean more ironing. The number of such articles of bedding needed depends on the frequency with which the washing is done. Baby's washing is best done daily, like the dishes, so that fewer things can be made to do duty quite as well as more. Bedding that can be washed daily with the diapers and used often without ironing is the more practical and quite as satisfactory in every way. It is well to plan a smaller piece of *rubber sheeting*, say, eighteen inches square, or even twelve by eighteen inches, to put across the baby's bed under his hips—this to be covered by an extra diaper.

This plan for baby's bed is a very good one; but here is one even simpler for the first weeks or three or four months. When baby is tiny, it is surprising how diapers can be used for everything. It is understood that baby's diapers are either boiled or sunned daily, and so are always the cleanest things possible when ready to be used, whatever the purpose. There are many possibilities in a pile of fresh, clean, folded diapers. Please don't plan to iron them, mother, unless you have help or a mangle or both. For that first little basket bed they can be used even for sheets.

If you already have reared several babies, or if you don't want even your first baby to take all your time from your husband and friends, and want an easy way to make up baby's bed, try this: Buy by the yard enough washable rubberized sheeting to make about four or six rubber sheets just the size of the basket, or sufficiently large to protect the little mattress. Bind the edges, and over one of these sheets place one or two diapers. Then fold another diaper under baby's hips. The extra diaper is changed as often as necessary. But every night and every morning, in making baby's bed fresh for the night or the day, as the case may be, remove the rubberized sheet, and let it be washed with the diapers in the morning, replacing with a fresh one. Or if this makes too much in the way of rubber sheets for daily washing and drying, plan for six or eight smaller rubber squares to put under baby's hips besides the large one covering the entire mattress. Thus the large rubber sheet will be well protected, and the little waterproof squares will not add materially to the task of daily washing. This rubberized material, which can be bought almost anywhere nowadays, is very unrubberlike, so there is no need for the heavier quilted pads, which are more bothersome to wash and especially to dry. The extra folded diaper always under baby's hips and changed when damp, keeps the small waterproof square from getting too damp for service the day or night through. Ordinary oil-cloth may always be used, but will need to be more carefully protected because of its cold feel.

It will be well to have a piece of rubber cloth a yard square to place here and there under baby, for example when he has

his hour on mother's bed. Yes, and then diapers can be used for towels and to put under baby's chin when he gets his orange juice.

Baby will need *no pillow*, much as we would like to have one, because it looks cute. A very flat pillow may, of course, be made,

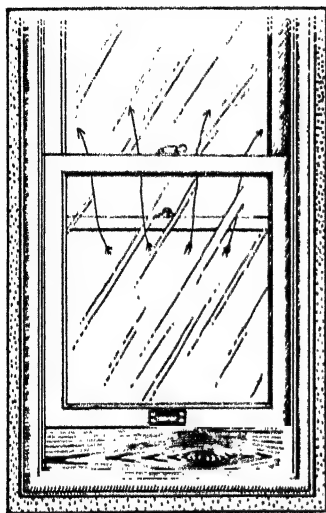


Fig. 20
VENTILATION

A small board cut to the right length and set under raised lower sash is a good method of obtaining fresh air without direct draft.

just for appearance, and with its little white case will look very important, while, in reality, it amounts to little as far as depth or thickness is concerned. A little later when he begins to sit up, he will need a pillow or two maybe. Finally two or three fleecy *blankets*; and we may be sure that baby will be as "snug as a bug in a rug," when he at last takes his important place in this little nest so carefully prepared for him.

Furnishings and Supplies.

The placing of the bed in the room is important. There should be plenty of air, but baby must be protected from drafts, and the light from the windows must not shine in his eyes. The room itself should be as free from superfluous furniture as possible, whether baby is so fortunate as to have a

room to himself or whether he will have to share with some one else. It will be much better for both mother and baby if he doesn't have to sleep in mother's room at night. If he is far enough from her so she doesn't hear every little move or fussing, things will much sooner adjust themselves so that both will sleep the night through. An overanxious mother, by her solicitude every time baby shows any indication of waking in the night, will do much to train him to expect little attentions at night that often are unnecessary. By the quiet darkness of the night he will soon be trained to sleep the night through if he

finds that something doesn't happen every time he moves. See page 145.

The rugs on the floors would better be few, small, and washable, and the draperies likewise very simple. A *table* of some kind should be planned. It may be low enough so that mother can reach anything on it from her chair; or, as a work table, it may be high enough so that it may be convenient for her to stand by. The articles on this table should be as follows: 1. A pile of diapers. 2. Safety pins. 3. Talcum powder. 4. Zinc stearate powder. 5. Zinc oxide ointment. 6. Albolene, or baby oil. 7. Soap. 8. Hairbrush. 9. Cotton squares made by cutting substantial flakes of absorbent cotton to the size of $1\frac{1}{2} \times 1\frac{1}{2}$ inches. 10. Gauze or cheesecloth squares 3×3 inches (glass jars or other covered containers are best for these last two). A jar of cotton applicators made by twisting wisps of cotton firmly on the end of toothpicks or applicators that can be bought at a drugstore. Conveniently arrange all articles on the table.

There is a great advantage in laying baby on a table for his various attentions,—a table high enough so that mother can stand before it just as if she were washing the dishes. Without any bending or back breaking, she can change his diapers and do other things for him with even more ease than if she were sitting in a chair trying, perhaps, to reach something just a bit too far away, or something that isn't there at all and that she must get up for. If the plan is to have the higher table, then it will be well to plan a couple of *shelves* on the wall just above it, to hold the articles we have enumerated for the low table. The better plan will no doubt be to get the higher table, then if for any reason the low table is to be preferred, the legs can easily be shortened.

A *screen* for protection from draft will often be found of good service, and small light *clothes bars* on which to hang baby's clothes for airing will be very helpful. A *set of drawers* for baby's clothing is quite indispensable. A *thermometer* on the wall near his bed will make it possible to keep the room temperature about right, which should be from 66° to 68° for daytime and around 60° at night. After the first few weeks, the night temperature may be lowered. In warmer weather the difference in temperature must be allowed for in the variation of baby's clothing. In

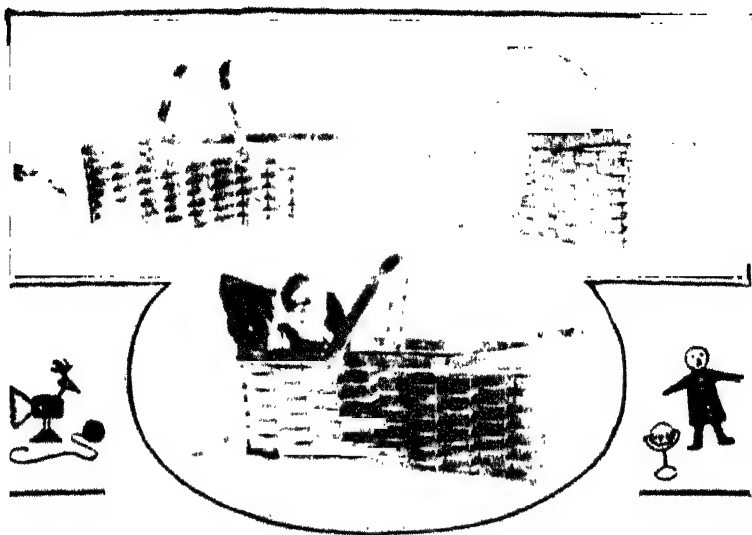


Fig. 21. THE CARRYING BASKET


winter plans must be laid for ventilation and for regularly airing the rooms. A sleeping porch is an ideal place for baby when the weather is not too cold.

Everything in the room and about the baby will be kept as clean as soap and water can make it; and, since this will all mean work for mother, the simpler the arrangement the better it will be.

The Carrying Basket. As already suggested (see page 110), one of the most convenient things to have for baby is a *smaller basket* with long handles meeting in the center above the basket, in which he can be placed and carried about when it is necessary for him to go places. Often there is no other way than for baby to "go too," else mother would need always to stay at home. And if moving doesn't mean any interference with baby's daily routine or cause extra handling, he may go with mother and daddy on occasion without harm to himself or trouble to anybody. This extra basket takes the place of his regular bed, and admits of his being transported with little more change, as far as his comfort or consciousness is concerned, than if he were

left at home. Ideally, of course, baby's place is at home, because of the intensive inspection and handling to which he is almost sure to be subjected by family friends when he goes out. However, the little carrying basket minimizes this, and mother's wisdom and tact may prevent any serious interference with the serenity of baby's nervous system or of his comfort by any of these irregularities. The basket easily lifts into the back of the car. It can be carried some distance, if necessary. When taken into house or church or whatever destination, baby's quiet is undisturbed, and he is therefore not prone to disturb anyone's peace, but lives on in his own contented and peaceful way. A *baby carriage* is desirable, but not an essential; and, anyway, it isn't the most important thing for the first weeks.

Some Small Essentials. A more complete list of the smaller things that must be remembered (some already mentioned), we will give as follows: Nursing bottles (two to begin with), nipples, soap, wash cloths, safety pins (get big ones that he can't swallow), talcum powder, boric acid crystals, towels, bath thermometer, absorbent cotton, vaseline, zinc ointment, zinc stearate powder. A *bath tub* is an important piece of furniture for the new member. There may be other articles that will be desired for baby after he arrives, but the plans that we have suggested and the things that we have enumerated will make it possible for him to have the very best of care when he at last makes his appearance. Every mother will have her own way of doing things and her own ideas of convenience, and there is much opportunity for originality as regards the important but delightful task of taking care of baby.



SECTION V

The Baby Himself

The Baby's Arrival

Baby Is Here. The baby has arrived, as announced by his lusty cry. Though there may be times in his future career when his cry is an annoyance or causes anxiety, this is the one time in his experience when the sound of his vociferous protest is a delight to all who hear it.

A dainty flower has formed to flesh;
 A blossom from some fairy tree,
 Which keeps its tender spirit fresh
 Upon the dews of Arcady,
 And bore the sweetest bud that ever was or is to be.

—*Edmund Vance Cooke,*
In "Chronicles of the Little Tot."

What wealth of love goes out to the tiny, helpless being within which lie such possibilities of growth and development, of love and happiness, yes, and of sorrow and suffering! And who can become indifferent to the thrill prompted by the sound of that first cry?

Hospital or Home? It will be a safeguard for all concerned, and usually less expensive in the long run, if baby's arrival is at the hospital rather than at home. Then the muss and fuss are all away from the domain where lies mother's responsibility, and she can relax and rest, knowing that all matters will be properly looked after without any thought or anxiety on her part. If she is away from her home cares and the other children, in peace and quiet, her lying-in time may be a happy and peaceful respite. At home she will have to do a certain amount of answering questions and seeing to things, no matter who else may be there, and she will still be conscious of her responsibility to the other children and to the family.

Confinement at Home. If the confinement takes place at home, there is much that will need to be done in preparation of supplies and getting mother's room in shape for the occasion and her stay in bed following. If she goes to the hospital, all the extra thought and preparation are avoided. Here, in case of

emergency, there is everything that might be needed at the doctor's call. In the home, under emergency conditions the doctor may have to work at great disadvantage to himself. There may be delay, and thus the hazards for both mother and baby are greatly increased. So we will go to the hospital if we possibly can.¹

If for any reason, however, delivery must take place at home, the mother has been carefully informed by her physician or the nurse in charge in regard to the proper plans to be made; for it is quite as important under such conditions for the mother to have the best of medical and nursing care as if she were in the hospital.

Baby as He Is. But, whatever the plan, baby is safely here. Let us inspect him, to see what he looks like. Yes, all babies look the same; but what are some of the things about this typical baby that we should know in order to become really acquainted with him?

The average girl baby weighs about seven pounds at birth, and the average boy about seven and one fourth pounds. The length of baby's wee body from crown to toe averages nineteen or twenty inches; his sitting height is about fourteen inches; the circumference of his chest is thirteen and a half inches; of his head, fourteen inches. His abdomen is about the same size as his head. In color, he is a deep pink, mixed with which there is at first often a suggestion of blueness; but the more vigorously he cries, the more quickly does the relation between circulation and respiration become established and the skin attains the rosy hue so typical of the healthy newborn infant.

Baby's skin is covered with a white pastelike protective coating called *vernix caseosa*, which is best removed with sweet oil applied freely and gently wiped off with a soft cloth. This removed, the skin is soft and as smooth as velvet. Baby's eyes are a uniform slate color, usually called blue, but it is impossible to tell just what their color will eventually be. It will not worry us

¹ The standing of the hospital in any community should, of course, be considered. In some parts of the country there is still a question as to the advantage of hospital care over the best of home care. If there is any question, the advice of the physician should be depended upon.

if baby's head is not so shapely as we would like it to be, for we know that the natural resilience of delicate bones will allow the head gradually to assume a more handsome contour as the days go by. There are two "soft spots" in baby's head. These both vary somewhat in size in different babies. They are places where the bones of the skull do not meet; but, as time goes on, bony development covers over, and the soft spots disappear. The larger one has its center just in front of an imaginary line across the top of the head between the tips of the ears. The other and smaller one is at the back of the head, the center about an inch back of this same imaginary line across the head between the ear tips. The smaller one is hardly noticeable, and closes completely by the time baby is six months old. The larger one does not close entirely until baby is about nineteen months old.

Baby's muscles are very active, and there is a great deal of strength in them. Especially is this true of the flexor muscles, as attested by his grip when you slip your finger into his tiny fist, and by the actual strength that it takes to keep his legs extended. A normal baby shows no disposition now to lie straight, but prefers the position of flexion, and tends to curl up. His muscular movements are purposeless as far as any intention on his part is concerned, with one exception,—he knows just how to use the muscles necessary for the drawing of food and drink.

First Care. The doctor and nurse have attended to the first of baby's needs. He has had his cleansing oil rub, the delicate body parts have been carefully cleansed with boric acid solution, and, in addition, each eye has the protective drop of *argyrol* or *silver nitrate* that prevents the possibility of infection. The cord stump, which is always considered an open wound, has had proper care and a sterile dressing applied, great care having been taken that there should be no contact with any nonsterile thing that might prevent its being kept what we call *surgically clean*, that is, germ free. To hold on the cord dressing, a band of cheesecloth or gauze or soft muslin or outing flannel has been applied around the little abdomen. This is kept on for the sole purpose of keeping the sterile dressing in place—not to keep the baby from "bursting himself when he cries."

In case there is not a trained nurse in charge, the doctor has



BLACK STAR

Fig. 22. THREE IMPORTANT STEPS IN THE CARE OF THE
NEWBORN BABY

Wipe the eyes gently and drop two or three drops of 1 per cent nitrate of silver in each eye. Wipe the mouth and nose carefully. After oiling the baby's skin, dust with baby powder.

left careful directions with the one who is to have the very important responsibility of baby's and mother's care for the first two or three weeks of baby's life. And baby's life has begun. A new life it is, indeed--the newborn must now do his own digesting and his own breathing, and must keep up his own body warmth. He begins for the first time an independent existence.

Don't Worry If He Cries. Crying is good for this new baby, for it expands the lungs and fills with air the tiny cells that have never had air in them before. And whether he cries or not, one of the most important things for him is quiet and regularity of program. To be let alone except for necessary care is what nature asks for him. Just see that his daily routine is regular, that his clothing and quarters are as comfortable as such new and foreign garb and surroundings could be expected to be, and baby's training for health and character development has been properly begun.

Birth Registration. One more thing--do not fail to be sure that baby's birth is duly and properly registered. Unless you know that the doctor is attending to it, send to your county or city health department for a blank birth certificate. Fill this out at once, and mail it back to your health department. Your baby does not exist legally until this is done.



Fig. 23. ABDOMINAL BINDER

Baby's Adjustment to His New Surroundings

The First Week of Life. Baby's introduction to his new life may be rather a trying time to him and to all concerned if there is not something of an understanding of the situation and of baby's needs during this initial period. It is important that those who have to do with his care know about what to expect from him at this time when his surroundings and environment are so new.

The first week of baby's life is a period of adjustment. It is usually a week before his temperature, which drops at birth, swings up to the normal 98.6° F. And baby, like the little water animal that he has been, changes body temperature rather easily, depending upon surrounding conditions. And while it is important that he be kept warm enough during these first days, yet it should be remembered that it is possible to keep him too warm. The same hot water bottle and blankets are not necessary in July as in January. New babies have been known to develop a temperature of 105° and convulsions just from excessive wrapping during hot summer weather. It is a very good plan to take baby's temperature by rectum twice daily during his first week or two in order that any unusual change may be noted. The normal variation would be from 98° to 100° F.

Care of the Umbilicus. The umbilical, or navel, cord usually separates by the fifth day, though sometimes it takes several days longer than this. Until the wound is entirely healed, the cord dressing should be kept in place. And until the healing is complete, baby should not have a tub bath, but should be sponged daily, with special attention to the scalp, skin folds of the neck, behind the ears, the groins, and buttocks. The soap used should be mild, like Ivory or Castile. The navel dressing is not disturbed unless it becomes wet or soiled, and then it should be changed only by one understanding the technic of keeping things *sterile*, or germ free. In case of emergency, a square of cheese-

cloth, 3 x 3 inches, which has been baked in the oven until almost scorched, or heated in the same way in a dry pan over the flame, may be put over the navel wound, taking care that fingers or anything else do not touch the navel or the surface of gauze that is placed over it.

Some Irregularities. During the first week some babies—perhaps 20 per cent—show a little jaundice. This is of no consequence if it is not too extreme or does not last too long. Occasionally babies' breasts secrete a little milky fluid, but in any case the breasts should be let alone save for a protective dressing, if necessary to absorb moisture. In about one case in twenty, the female infant will have a slight menstrual discharge, but this is of little consequence. All these irregular things should, of course, be reported to the physician. If the baby does not urinate in twelve hours, the physician should be notified.

Special Senses at Birth. As to baby's special senses at birth, touch and taste are already well developed. The eyes are sensitive to light and the ears to sound. Baby can probably see from the first, but it takes a few days for him to come to the place where his growing intelligence helps him to recognize what he sees. The difference between sleep and waking is not very marked at this time, not until about the end of the first week, and during these first few days—and, yes, weeks—baby should always be considered as asleep; that is, kept quiet and alone except for necessary attention. If he cries, that is only the natural reflex necessary for his development, and is nothing to worry about, that is, if his care is what it should be and his needs are regularly supplied.

Bed and Clothing. Except as it is necessary for him to have attention, he lies in his bed, his sensitive eyes protected from too extreme light and his body protected from drafts. While he should be kept warm, it is better to have a carefully protected hot water bottle at the foot of his bed than to have him weighed down with too heavy a weight of bed clothing. His blankets, well tucked in about him, are kept from pressing too heavily upon his little feet by a roll of towel placed across the foot of his bed. This will serve to lift the blankets off his feet and will prevent the hampering of his active muscles. Remember that

he must have air to breathe, and do not keep his face too carefully protected.

We must remember that this wearing of clothes is a new experience for baby, and no wonder he fusses at times. Read chapter 15. The soft watery bed in which he floated before birth had no wrinkles or anything that could possibly irritate his

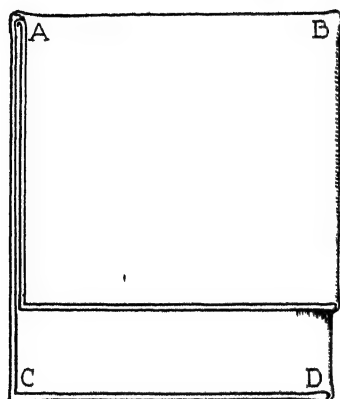
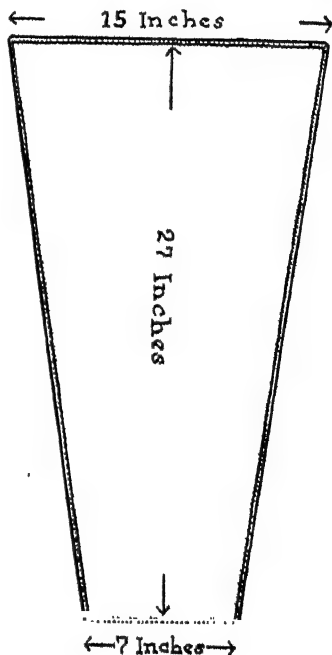


Fig 24. DIAPER DIAGRAM

Corners C and D go up between legs to meet corners A and B at the sides of baby's body at about the waistline, and are there fastened with two safety pins. To the right is shown the proper dimensions of the elongated triangular diaper.



tender skin, and he was left to himself with no outside bothering of any kind. So, with all these strange new things,—dressings and undressings, movings and handlings,—we must be patient with his cryings and keep him as free as possible from the things that might add to his discomfort. See that his clothes are free and loose, that there is no pressure of safety pins or band, that the garments that touch his delicate skin have no harshness about them, that his diaper is put on in the least bunglesome way. Try the square diaper plan instead of the old triangular method. Fold the 27-inch square diaper once—its dimensions now being $27 \times 13\frac{1}{2}$ inches—then fold

over one end so that the diaper as folded is about or a little more than one-half its original length. Slip the thicker folded end under the little hips, then bring the opposite end with its fewer thicknesses up between his thighs, its corners to meet the corners of the folded end at the sides of his body above his hips. Two safety pins are sufficient.

Bowel Movements. Baby's first bowel movements are dark green, gradually becoming brown, then yellow, in the first few days. And if mother's as well as baby's feeding habits are regular, his bowels will soon show tendency to regularity in movement and character. During this first week there is a loss in weight, usually about one-half pound. This is because there is at first very little nourishment in mother's milk. Rather than food value, there is a fluid called colostrum, which, being slightly laxative in nature, acts gently to clean out baby's bowel tract so that it may be ready for service in a new capacity. As mother's milk becomes well established, baby begins to gain, and at the end of the second week his weight again reaches that of birth; and from then on it continues to increase.

Nursing. Though baby doesn't get much to eat for the first two or three days, his first nursing is usually from eight to twelve hours after birth. This has given mother an opportunity for rest, and the regular placing at the breast gives the baby the benefit of the colostrum already spoken of, and stimulates the breasts to activity. Nursing having begun, it is continued thereafter about every three hours, or as advised by the physician. A well-nourished baby may be put on the four-hour schedule from birth, though usually the three-hour interval is advised for the first weeks. It is well to give the baby a little water between feedings until the milk flow is well established, perhaps an ounce every two hours, but he must not be made a water tippler. After mother's milk comes, it is usually sufficient for fluid as well as for food supply. Even then, however, it is well to give the baby the opportunity of water drinking once or twice a day. If he does not want it, there is nothing to worry about. Baby is weighed at once, for everybody is very much interested to know how much he weighs, and this gives a basis for checking as to future loss or gain.

Early Days at Home. When he first comes home from the hospital, at the end of about two weeks, there is another period of adjustment, but this is more of the family than of the baby. Baby's spells of lung exercise at first are just as likely to occur at night as during the day, and for that reason are a bit trying; but the extreme quiet of this dark part of the twenty-four hours soon influences him to fall in line in a coöperative way. There is little difficulty about his training to regular habits if his daily routine is held to with unvarying regularity. If he is on the proper program and not fussed with too much, his occasional crying spells will not need to be any source of anxiety to anyone, and should be taken as a matter of course. There is really nothing to be done about it, anyway. Picking him up simply diverts him for the time, and in no way lessens the sum total of his crying. It is important to know that he is normal and properly cared for and fed, then his occasional noisiness need cause little concern.

For the first month or six weeks there is no special deviation from the feeding-basket-bath-feeding-basket plan. Baby is kept dry, clean, warm, and quiet. His only activities are his crying and purposeless muscular movements. If he laughs, do not be deceived into thinking he is extra bright—simply reflex action, that's all; and if he looks cross-eyed, don't be anxious—just another evidence of normal muscular instability.

Weight. An important index to his condition is his weight. And if baby doesn't gain in weight, everybody begins to worry; and well they should, for if he doesn't gain properly, something is wrong, and no time must be lost in setting this something right in order that he may get the start that he needs to safeguard him against trouble in the following weeks. The only thing that can keep him from gaining is an insufficient food supply. So we must pay some attention to the source of this supply. For baby's sake, mother must not be neglected even though baby has arrived safely and is in the pink of condition. Mother's diet is important as well as baby's, for upon what mother eats must baby depend for his nourishment. We shall learn more about this in our next chapter.

The Family's Adjustment to the New Baby

The New Baby. It is all so wonderful to have a new baby in the house! He is the center of attraction and the main subject of attention and conversation. Every one wants to look at him, not once but again and again, to hold him, play with him, cuddle him, and love him. Just to let him alone long enough for him to get accustomed to himself in quiet surroundings is next to impossible; and if he cries, some one must jump up at once and do something, for "if he cries, he will rupture himself." Anyway, "no one can stand it to hear him cry."

Some way, baby doesn't seem to understand that night is different from day, and his intermittent spells of quiet and crying keep up at night as well as in the daytime. At night there aren't so many to run and give him attention, so it somehow seems to fall mostly on mother, this attending to his nighttime wants,—unless she can press father sleepily into service.

Father, mother, and, yes, neighbors too, begin to long for the time when baby is older and can be depended on for something, at least during sleeping hours. And, of course, the care of one baby being such a task, if a second baby should come along before the first is quite grown up, it would be a calamity—so everybody thinks. Having a baby is hard enough, they say, but taking care of it, especially during its first weeks, is ruinous to any mother's health; and, well, the babies in any one family must be limited, that's all,—that is, if mother is to have any nerves or endurance or health.

Making His Care Easy. But now just a minute—this mental attitude is all wrong! It isn't so, not a bit of it! We know, for we have taken care of five of our own, and had a hand in the care of scores of others; and there is no question but that how to care for a tiny baby in the way that is *easiest* as well as best is the very most important thing a mother can learn, for her own sake and baby's sake and the sake of the entire family.

"But," you ask, "just how is this thing to be done? How is this wonderful knack to be acquired?" And that is the question that should be asked by every woman into whose maternal care is intrusted the wee mite of humanity we call the baby. And that is the thing that every mother (and father and relatives and friends) should understand.

There are just two underlying principles that have to do with this important question; namely, what baby's needs are, and the system with which they should be supplied. We should perhaps discuss system first.

System in His Care. There should be nothing haphazard or spasmodic in baby's care—this way one time and that way another. It should be the same thing at the same time in the same way every day—day after day the same, with no variation, until baby never thinks of or expects anything else, but in peace, quiet, and contentment thrives and grows as every baby should. A baby that is normal at birth need never be anything but a well, contented, happy baby as the months go by, if only he has supplied to him regularly the things that he needs, and not irregularly a lot of things he doesn't need. He should have a regular time for sleeping, for bathing, for exercise, for eating, and, yes, for being fondled and caressed, for this latter should not be left out of baby's program. During the first weeks of baby's life he needs just five things: food, quiet, cleanliness, pure air, and a proper degree of warmth.

Feeding. Whether from the breast or the bottle, feeding should be not oftener than every three hours. If baby gets enough each time he nurses, he will be quite content to wait the three hours. One of the night feedings should be omitted from the start, making his daily number of feedings seven instead of eight. If baby is robust, four-hour feedings may be instituted from the start, making six in twenty-four hours. The sooner there can be the change from the three-hour to the four-hour schedule, the better for mother and often for baby as well, as it gives both longer intervals of rest. By six weeks or two months this can usually be accomplished very easily. In many hospitals the four-hour interval is now used from the very beginning.

Once on the four-hour schedule, no matter when he begins, baby will soon get to where he will do nicely on five instead of six feedings in twenty-four hours.

After Nursing. After nursing he should be returned to the quiet of his bed, and *left alone*. This is hard to do, but it is the very best thing for baby—and the very best for every one else, in spite of inclination to do the opposite. Mother may linger a bit over the nursing time, tenderly holding the tiny one to her breast even after nursing is done; but baby should very soon be transferred to his bed, and mother be left free to attend to other duties awaiting her. Baby will at times do some fussing and squirming and crying, but this is all in the normal course of events, and can be disregarded. Heartless? No, just wise. If baby has one or two or three normal stools daily (or even once in a while goes a whole day without any) and does not vomit more than a little spilling over after nursing, or even an occasional "spitting" between; if he is gaining five to eight ounces a week; if his clothes are put on with a proper regard for his comfort; if he is not too warm, and is in a pleasant, well-ventilated room, with care that too much light is not shining directly in his eyes, his apparent protest at his release from loving arms need cause no concern, and again we say it may be disregarded.

Don't Keep Him Too Warm. And remember that baby is often too warm, and crying greatly increases his warmth and discomfort. No wonder he gets frantic. If baby is having a crying spell, it may be a very wise thing to slip up to him quietly and pull off some of his covers—these to be replaced if necessary after he has become quiet. Many a poor baby suffers the greatest discomfort from being kept swathed in such wrappings that his skin is continually damp with perspiration. Then when his hands and feet get cold from sheer nervousness, he is covered up warmer than ever. And it takes very little imagination for us to appreciate what it must mean when the exercise of vigorous crying changes a bad situation to one that is intolerable.

Hungry? Of course he might be hungry, but any mother can tell if her baby isn't getting enough to eat. His hunger symptoms before and at the close of an insufficient feeding are not to be misunderstood, and the scales inevitably tell the story.

Every mother knows, these days, that a weekly weighing is essential for the intelligent care of her baby. And if he isn't gaining, the source of supply must be investigated.

Baby should have food from mother's breast if this is possible. If not, he should have a food formula prepared by a physician who makes a specialty of baby care. If this precaution is taken, we need rarely see babies suffering of malnutrition and chronic digestive troubles.

But to try first this food and then that or this and that neighbor's or friend's suggestion on a baby who is denied the blessing of mother's milk is to lay a foundation for serious troubles, which are bound to follow, and that right early.

Mother's Diet. Since the food supply of the breast-fed baby is dependent solely upon what the mother eats, the nursing mother's diet program is of great importance, and should be something like the following:

Breakfast: *Fruit*,¹ some raw if possible. Tomatoes may be used as fruit. *Cereal* food in any form, as toast, rolls, muffins, mush, dry prepared cereals, gruels, rice, corn bread, etc. In the main, choose cereals that are made from whole grains. Remember that banana is more like a cereal food than a fruit. *Milk*, one to two cups. Hot boiled milk may be best as it is readily assimilated. Egg may be added if desired. "Trimmings" and accessories should be in the form of honey, dates, raisins, nuts, olives, avocado, rather than as jams, jellies, or even too much butter. Extra cream may be added if mother is thin, but not if she tends to gain more than she should in weight.



Fig. 28
RELIABLE SCALES ON WHICH TO
WEIGH THE BABY

¹ The idea that fruit should not be used by the nursing mother has had no foundation in fact. If there was ever a time when an abundance of fruit is needed in the diet, it is when the diet of the one must furnish vitamin supply for two; and there can be no possible reason why the acid or bulk of the fruit in a mother's diet would give her baby the colic.

Lunch (or supper): This meal should be much like breakfast, except that for variation raw vegetables may be served instead of the raw *fruit*, or perhaps in combination, as an apple and celery salad. Raw vegetable salad and a stewed or dried fruit may both be used with advantage. The *cereal*, or starchy, part of lunch may be selected from the list given for breakfast, or a baked potato may be substituted for some of the cereal, or macaroni or spaghetti or other equivalent starch may form this part of the meal. Again *milk* must be used freely—just as milk or in a different form, as a milk soup or cottage cheese, or as buttermilk with or without cream, depending on mother's weight. Or malted milk may be called into service. Cocoa for a change may be allowed, but is usually too concentrated in its fat and sweet content to be used daily. The suggestion in regard to "trimmings" and accessories for breakfast is applicable as well to lunch. Mother's weight and digestion must be the criterion, and the "trimmings" must never displace the important fruit, vegetable, and milk with their vitamins and building qualities. There is no need for mother to get fat just because she is nursing baby. When she finds this happening, she should just omit almost all the accessories and even skim the milk she drinks. The food so needed by baby is not necessarily in the sweets and cream.

The principle of dinner is the same, except that vegetables instead of fruits are the bulky food. The outline for dinner should be about as follows: *Vegetables* freely and in any form desired, as soups, salads, and cooked. *Milk*, in soups, cooked in food, as cottage cheese, buttermilk, pasteurized or boiled milk. Eggs may be used as a partial milk equivalent if desired, and, if meat is used, it should be included in this group. It will be well always to drink a glass of milk in addition to whatever milk may be prepared with the food served. Malted milk may be used if desired. Evaporated milks are all right for cooking, and are better oftentimes than cream because of their higher tissue-building value. *Desserts* may be used if the meal has not been too rich in its starch value, as in breads, macaroni, rice, potato, beans. The amount of desserts and starches used will depend largely upon mother's appetite after her vegetable-and-milk

needs have been assured. The simple natural sweets, as honey, dates, and raisins, are always good; and the natural fats, as olives, avocado, and nuts, are better than too much in the way of fatty dressings and butter.

It may be well to have an extra drink of milk at bedtime. This is the only time, however, that we would advise milk between meals. A glass or two of orange juice between meals will be very good for the nursing mother, and will do much to insure a good milk supply for baby. Vegetable juices and vegetable waters are also very helpful in this regard, and may be used as drinks at any time.

Keep Mother Rested. Let the whole family help mother to keep to a schedule that will permit of her getting the rest she needs, so that baby may get his milk, if not from "contented cows," at least from a serene and happy mother. And let mother do her best, for baby's sake, to cultivate this serenity even under circumstances not always altogether conducive to such a mental state.

Care of Mother's Breasts. Now just a word as to the care of mother's breasts—the source of baby's food supply. For her own sake as well as baby's, it is important that special attention be paid to proper cleansing of the nipples at nursing time. Frequent bathing and changes of undergarments are important safeguards, and, just before baby nurses, the nipple of the breast to be nursed should be washed with at least water, better with soap and water, then rinsed with clear water or boric acid solution. Wipe off any excess of boric acid solution. That pile of gauze squares spoken of on page 114 can be drawn upon to furnish most satisfactory and practical wash cloths for mother to use in this initial preparation for baby's meal. Or the jar of cotton squares continually replenished may be even better. The repeated use of a wash cloth without a washing of the cloth itself is, of course, worse than no cleansing. It would seem as important for baby that the natural nipple be kept clean as that the rubber one we so frequently sterilize be kept above question, even though baby does seem to acquire an immunity to mother's germs. However, there is another reason for this attention to cleanliness, and that other reason is mother herself. The press-

ing of baby's vigorous sucking on an unclean nipple may most certainly be a factor in the production of sore nipple and that much-to-be-dreaded condition, breast abscess. While breast abscess may occur under conditions of carefulness in this regard, such an unfortunate condition is not likely to occur if special care is taken that the breasts and nipples are kept clean. If mother is going out and knows that she will have no opportunity to cleanse the nipples before nursing her baby, let her wash her breasts and place a protective pad of gauze over the nipples, to be removed at nursing time. It is very well to wear a supporter that will properly lift the breasts, not just press against them. A proper supporter not only supports, but also makes convenient the wearing of the clean protective gauze. It is desirable that there be several such supporters. Then they can be changed frequently, and washed.

A Day With the Baby

Breakfast Time. Yes, that's baby! Funny, how he wakes up before six, just when we are enjoying a last little snooze and might just as well have a half hour more if it weren't for that little fellow. Dark as midnight, too! Some excuse for early rising in June, but here in the dead of winter—well, there's nothing to do but wake up and get up, for he's tuning it up pretty lively, and the longer we let him cry, the more he thinks that it's his persistence that has won when at last we do take him up for his breakfast. And since it is so nearly six,—his breakfast time by schedule,—we'll strain a point, and let him have it now. But remember, young man (or young lady), you'll have to wait till schedule time for your next meal, even if you are a bit ahead just now. It is a whole two months, we'll say, since you took up your abode with us, and this means that you should be on the four-hour nursing schedule. So your second feeding will be at ten o'clock, no matter when you inveigled mother into giving you your breakfast. (If you are still on the three-hour plan, your second feeding will be at nine.)

Quiet reigns during this delightful breakfast period, and everybody, mother included, sleeps a few winks more. But, eating time over in fifteen or twenty minutes, there is nothing for it but to get up, change baby's diaper, fix him cozy and warm, tuck him back in his little basket, and let him lie contentedly while mother gets breakfast for the other members of the family. Yes, he fusses a little once in a while, but the morning program keeps every one too busy to pay much attention to him. And it is coming to be very plain to this tiny member that just about the same thing happens every morning, whether he laughs or cries. Big sister peeps in at him, and daddy can't resist a squint too, but in the main he gets left pretty much alone during this busy early morning time.

Getting Ready for His Bath. The family breakfast over by half past seven, and daddy gone to work, mother feels that baby has been neglected long enough; and his morning toilet

and bath may well take precedence over some other morning duties. Why not baby's bath at this time instead of the proverbial ten or eleven o'clock hour? Anyway, it can be done now if mother feels so inclined—her convenience and disposition are to be considered quite as much as baby's. So out of his crib he comes. He has been in his bed since six thirty the night before, except as he has been taken out and nursed and his diapers changed. Now is the time for a respite. If there is a warm room with a bed in it, one of the very finest things is to take off baby's clothes and give him the right of way on the smooth top of this bed. Or, perhaps, more practical and not so hard on mother's back, will be a plain wooden table of the right height, made and padded for this special purpose and kept in place close to baby's bath things. See page 114. The kitchen often is the brightest and most comfortable place in the morning for this delightful time in his daily program—his bath hour, and the sink drain board may even be pressed into service as the table just suggested.

Exercise Time. Watch him squirm and twist and kick, with mother's warm, loving hand now and again passing over his little body and rubbing him in a way in which he soon learns to take delight. Just let him alone for a minute, and watch him. Look out, or he will be off the bed or table in a trice! Exercise, did you say? Did you ever see muscles more strongly and incessantly alive? What a delight to revel in the freedom of nudity; to be liberated from the bondage of clothes! Turn him on his stomach, and see him hold up his head. There he goes, just like a little frog! What fun! And talk about a loving time—there is a lot of loving mixed in between mother and baby during this exercise period. But perhaps fifteen minutes is enough of this, for baby is still very wee, and mother hasn't much time to spare. Some other time can be planned, of course, if more convenient, for baby's exercise. While just before bath time seems the natural place for it, some other time may do just as well.

Baby's Bowels. Baby's bowels are likely to have moved sometime soon after his morning's nursing. This probable time can often be predetermined. A baby on a regular program soon



Fig. 26. A modern bathinette will assist the mother in bathing her baby quickly and safely.

comes to regularity of bowel habit. But if his bowels have not moved by bath time, they may be encouraged to do so now. With his little hips on a diaper, he is given a bit of massage to his abdomen. A small lubricated enema tip or a lubricated soap pencil may be inserted, and will usually bring results. Baby soon learns what is expected at a time like this. He may even at this age or younger be held over a little "pottie" placed between mother's knees. Some babies will have a bowel movement every time they eat, and in such case it is quite an easy matter to plan for it. Better ask the doctor about it, though, if there is such frequent bowel action.

Bath Time. The following is about the plan for baby's first bathing days, to be modified somewhat as he grows older: The things conveniently at hand are baby's soap (Ivory, Castile, or other bland kind); his wash cloth, fresh and clean every morning; a cup of warm boric acid solution, made by dissolving a teaspoonful of boric acid crystals in a cup of water from the boiling teakettle, and which, standing during baby's exercises, has cooled to comfortable temperature; a jar of cotton squares (see page 114), and one of cotton applicators; a bath thermometer; a baby's tub, half or two-thirds full of warm water, with a pitcher or teakettle of very hot water at hand, some of

which may be added carefully if necessary; and a second tub or large pan of cooler water for baby's final rinsing dip; baby's big towel, also clean and fresh every morning, and a smaller soft face towel or soft cloth that will answer the purpose; baby's clean clothes laid out, perhaps on a small, conveniently placed clothes rack within reach; safety pins; powder—zinc stearate powder, perhaps; soft hairbrush,—and this is about all for the ordinary daily bath routine.

It may be all very pleasant to sit down during baby's bath, and for the young mother not long back from the hospital it may be best to arrange things so that she can sit; but there is bound to be something just out of reach or something forgotten, and to get up and down a time or two during the bathing process, hanging on to the baby and his fixings, is quite as much strain, perhaps, on body and nervous system as the continuous standing posture by a high table during the rather short time it should take for the bath.

The thing that should be avoided is bending over a bed while tending to the baby. For this reason, a table about the height of the kitchen sink, large enough to permit of baby's vigorous exercise activities, and padded like the ironing board, makes the very finest place for baby's attentions during his bath and dressing, as well as diaper changing at any time during the day. The tub may be on a high stool or bench at the end of the table. The tub on the table itself may make the lift from table to tub a little hard, but on the stool at the end it is about right. The temperature of the room is about 72° F., as shown by the thermometer.

A square of oilcloth or rubber sheeting on the table is protected with a large towel or a diaper or two. Baby has perhaps been having his exercises on this very table. If so, it is a small matter to slip the protecting oilcloth under him. Or, if he has been exercising on mother's bed, he is quickly transported to the bathing table. Mother, with big clean apron on, looks ready to "do the dishes;" but it is baby this time, instead, that is to be "done." And she doesn't forget to see that her hands have been thoroughly washed with soap and rinsed with running water. And if baby's bowels move about this time, and she attends to



Fig. 27. To prevent baby from slipping in the tub, spread a bath towel over the bottom and sides of it and lower him into the water gently.

him just after her hands are washed, she must wash them again.

Initial Steps. Now with hands clean, mother dips into the cup of boric acid solution a square of cotton, squeezes it gently so it is not too drippy, and carefully washes baby's eyes, wiping each eye from the nose outward and using a fresh piece of cotton for each eye, discarding each square as used. With another cotton square, she washes the baby's genitals, pulling back the foreskin in an uncircumcised baby boy (and, by the way, circumcision makes cleanliness easier) or gently separating the parts in a baby girl, washing gently with boric acid solution with a downward movement toward the rectum, never from the rectum upward. A little gentle patting is sufficient, just enough to be sure that no small cheesy accumulation is left to cause irritation. Bits of cotton twisted on the end of a toothpick and dipped into the boric solution are used as swabs in gently wiping out baby's ears and nose. But it is just as well if the inside of baby's mouth is left alone.

The Bath Itself. These special initial things done, the next step is the shampoo part. Baby's warm, wet wash cloth, usually without soap, is first used on his face; then wet again and well soaped, it is applied carefully but rather vigorously to his head and scalp, behind his ears, the creases of his neck, his armpits, his hands and feet, and lastly his little buttocks and groins. Be especially careful about the folds in the little fat neck. Slip the soapy fingers deep into and well around the crease, so there is no chance for the redness and irritation that surely follow the neglect of this precaution. Then he is ready for dip number one. In the warm tub he goes, his head well supported. For this part, mother may sit down if she desires, having the stool height for the tub adjusted accordingly. Baby soon learns to love this part of the process.

Be very gentle at first—nothing to startle or frighten, water not too warm, but about 98° F. by bath thermometer, then, by adding hot water from the pitcher, increase to 100° or even to 102° . After mother and baby become accustomed to the bath, the temperature can be approximated without the use of the thermometer. In this tub baby stays from three to five minutes, or less if at first he doesn't care for it—maybe just long enough to rinse off the soap. Then quickly in and out of the second tub, the water in which will at first be only a little cooler in temperature from that of the first. But day by day, as baby gets more and more accustomed to his bath, the temperature of the water in the second tub is gradually lowered until baby, without realizing what is happening, becomes accustomed to a cool and, finally, to a cold rinse.

To be sure that baby, by some sudden turn, does not slip away from mother's supporting hand and his head go down into the water, a safe way to hold him is to pass the hand and wrist

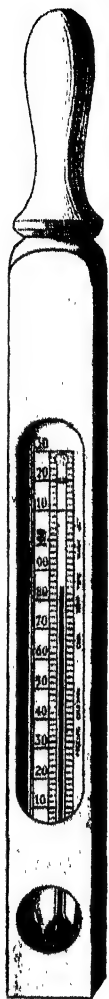


Fig. 28. Water Thermometer

under his shoulders and neck, and firmly grasp the arm and shoulder farther away with the supporting hand. This firm grip makes slipping impossible. See Fig. 27.

Drying and Dressing. Quickly he is lifted from the last tub to his big towel on the table, or if easier, into mother's lap,—mother sinking into the low rocker always at hand but within reach of the stand where are all of baby's things. Gentle but thorough patting, and baby is dry and happy; a little talcum or zinc stearate powder if any need, but dryness is the thing, and nothing else is really necessary unless a little irritation of baby's skin calls for zinc stearate—but never enough powder to cake or be left visible in the creases. Into stockings, shirt, diaper,—nothing more, perhaps, or maybe into a slip or sleeveless dress or "sleeper." Back into his homey basket, which, by the way, mother has found time between to get freshened up for the day. A drink of water or orange juice, and baby is so happy and contented that even if he does not sleep he never asks for a thing until time for that ten o'clock feeding. And the whole thing, exercise and all, hasn't taken more than forty-five minutes; perhaps not that long when both mother and baby get accustomed to the routine.

The bath over, diapers, damp bedding, wash cloths, and towels are washed and hung out, dishes are washed, and other morning work is done.

Soiled Diapers. If it is at all practical, it is far better if each diaper can be washed, or at least rinsed, as soon as it is taken off. If one has a bathroom convenient, it is very easy to wash out the diaper under running water—the water running from the tap into a pail kept there especially for that purpose. The pail is then emptied into the toilet, and there is no danger of clogged drain pipes. In the absence of convenient running water, the diaper can be washed in a pail or vessel of standing water, and the water thrown away. The diaper is then put with others to be more thoroughly washed at the regular time next morning. If this plan cannot be followed, and soiled diapers must accumulate for the twenty-four hours, they should be kept in a covered receptacle until washing time. This saving, however, makes the task of baby's morning wash assume unpleasant



DEVANCY

Fig. 29. Throughout his first year the baby should have a warm bath every day.

proportions that might be eliminated by the simple plan first suggested. But whichever way is done, don't leave soiled diapers exposed to flies. Dispose of them as summarily as possible. Have the disagreeable task over, and a comfortable consciousness of up-to-the-minute cleanliness. Don't lay a soiled diaper on the floor. Put it immediately into its proper receptacle.

Nursing Baby. At ten o'clock mother must stop and nurse baby, but this she may do while lying down; and, though baby will be through in fifteen or twenty minutes, let mother take the extra ten or fifteen minutes to get a real half-hour rest before she gets up, changes baby, and puts him back in his basket or crib. It is now ten thirty, and there are many things to be done; but, as far as baby is concerned, he is no trouble for the rest of the day. Whether sleeping or waking, he is contented. At each nursing time mother gets from twenty to thirty

minutes' rest, choosing very often the reclining position for this delightful respite, or, if not this, a comfortable chair with footstool, so that her relaxation is complete. Left alone, baby will sleep much of the time, and his sleeping habits will adjust themselves with definite regularity. His sleeping and waking times will alternate about the same from day to day. As he gets older, a little less sleep and a little more contented wakefulness. When weather permits, his basket will be out of doors or on a screened porch much of the time.

When Baby Gets Restless. From four to six o'clock in the afternoon is the time when he is often wont to rebel—hard to say just why. Perhaps a reaction from the extreme restfulness of the day following that wonderful bath; perhaps mother's natural fatigue during the later part of the day makes her milk supply a little less adequate and satisfactory; perhaps her nerve strain tells on baby; perhaps he needs the exercise that his protest against monotony gives him. Anyway, this seems the time when something different needs to be done. Mother plans his program and hers with this thought in mind. She anticipates this fretting time by changing his program, say, fifteen minutes earlier. Then he doesn't think he gets attention because of his fussing. This change may be made in a number of ways. Mother may sit and hold him for a while if she has time and feels like it. He may be taken out for a ride in his carriage,—one of the older children will love to do this. As he gets a little older, this hour may be the play and loving time of the day.

However, if mother is too busy and there is no one else to help, he may be given a change of scene by being lifted from his basket or crib on to a large bed, perhaps in a different room. His outer garments removed, he may kick to his heart's content in his shirt, diaper, and stockings. He's not going to take cold with legs and arms going like that. If weather or room is cool enough to demand it, he may have on a little extra sack, but voluminous diapers and bootees may keep him sufficiently warm even in a cool room. Don't forget that almost all babies are kept too warm.

Getting Ready for Bed. By half past five or even earlier, it is time to get him ready for bed. Mother plans for a special

half hour for this part of the program. Off come all his little clothes. He is allowed to squirm for an extra few minutes unhampered by garments of any kind. His back is rubbed, his night clothes are put on, he has his supper, and is put to bed. If more convenient, mother may let him have his six o'clock nursing first, and then get him ready for bed. She may choose to let him have his exercise time earlier, say, between four and five o'clock—maybe just before orange-juice time. She may nurse him at five thirty instead of six, and then let him rest contentedly during the family mealtime, putting him to bed at its close. The most convenient way should be planned; but, whatever the plan, there must be regularity.

Night Feedings. On the four-hour plan baby may wake up promptly for his regular feeding about ten o'clock; but, if mother is waiting to nurse him before she goes to bed, it will be quite all right to take him up by nine thirty, so that she can get to bed a little earlier. There is another plan, however, that may be carried out with advantage. If baby is allowed to follow his own inclination in regard to this feeding, it will be found that he will gradually come to wake up later and later. So, instead of waking him at nine thirty or ten, mother may, if she is tired and chooses to do so, let baby sleep on as long as he will. She may go to bed by eight o'clock or eight thirty and get a head start on her night's rest before baby's stirring tells her that he is waking up to be fed. He will often sleep until eleven or even twelve o'clock. And at whatever time he does waken, he has his meal, which he will take very happily, and can be put right back in his crib without much disturbance to anyone. On the four-hour schedule, this feeding makes the fifth in the twenty-four hours, and often baby will very soon sleep on through the night until five or six o'clock, and skip entirely his sixth feeding. This leaving it up to baby makes very easy an early transition from six to five feedings in twenty-four hours, and later to only four. If it can be arranged so that baby does not have to sleep in the room with mother, it will be much better. Then it will be only his vigorous crying that will awaken her, not every little unimportant move. In a room away from mother he will be much more likely to learn to sleep the night through. See page 113.

Variations in Program. The above is about the average day for any baby from seven or eight weeks to three months old. His bath may be given at nine thirty instead of seven thirty, or at any other time of day most convenient if this time, whenever it is, is made the regular daily bath time. We knew one woman whose husband tucked her in bed at half past eight every night so that she could get up at five o'clock, feed her baby, and get it all bathed, and ready for the day before breakfast. This mother had a wonderful morning with her baby, and an easy day ahead; for, of course, after the morning ablutions, baby was no trouble to anyone for the rest of the day. If baby is not robust, he may be on the three-hour schedule up to three months, with six feedings daily. He may be given his evening feeding at nine o'clock, and allowed to waken as he will for his midnight feeding. With the average well-nourished baby, the above program may be taken as a safe guide if it is adhered to with regularity, but many a thoughtful mother will modify it to her greater convenience. As baby gets firmly established in his little life, his bath taking may be greatly simplified. The boric acid preliminary may be omitted, cotton applicators and pledgets may be thrown to the winds, and soap and water, wash cloth and towel, may be depended upon to do the work, just as with grown-ups. Strict cleanliness with daily freshness of wash cloths and towel should always be carefully adhered to. And the strong-backed mother who prefers to put her baby tub in the big bath tub, or even to use the big tub itself, may feel perfectly free to do so.

Baby's Weight. Baby at two months weighs from nine to ten pounds. His skin has taken on a firmer tone, and has long since become pink and white instead of red. He shows signs of developing intelligence, and has begun to develop a personality. He has laughed a few times. He recognizes bright-colored objects, and shows recognition of sound direction. He registers responsiveness and pleasure at the sight of a smiling face. He has become accustomed to life, and fits into the family routine in a most charming way. He shows definite and satisfactory reaction to good training, and in such a setting the character building of another human being has been well begun.

SECTION VI

Becoming Established



By the end of his first three months, baby has become a real member of the family.

LAMBERT

Around the First Corner—At Three to Four Months

After Three Months. The first three months over, we breathe a sigh of relief. The three-month colicky period is past, and our baby is at last accustomed to his new home, and accepts with due resignation the program forced upon him. He is not quite such a delicate bit of humanity as he has been, and we are not quite so afraid something will happen to him. He has been established as a real member of the family, and he himself seems very cognizant of the fact.

Nursing Hours. At three months, there should be very little change in the quiet life of this tiny member. His program continues with the same punctilious regularity. With most babies, it is well by this time, if not before, to increase the nursing interval to four hours. If the baby is normal in weight, this can nearly always be done with advantage to both mother and babe, and the nursings, instead of being six in twenty-four hours, are thus reduced to five. On the four-hour schedule, the nursing hours are probably at six, ten, two, six, ten. The afternoon and evening intervals may be shortened to three and a half hours, so that mother can get to bed a little earlier. Or, as suggested in our last chapter, many mothers have found another variation at this time of day a helpful one. Many a tired mother, instead of waiting till nine thirty or ten o'clock for baby's last nursing, finds it easier to tumble into bed at eight or eight thirty and let baby sleep until he awakens, which will often be nearer midnight than nine or ten o'clock. A longer night's rest will be assured by waking and feeding him then and going right back to sleep than in waiting through a long evening for the final number on his program. It will not be long until baby will surprise the family by sleeping the night through, and giving everybody an unbroken night's rest. A normal baby, trained to a regular program, becomes in many ways the least trouble and the most dependable thing in the household. However, other mothers

may prefer to waken baby at nine thirty or ten o'clock, and then let him sleep on through till morning, which he will soon do very nicely if his daily schedule is adequate and sufficient. The way that is most convenient for mother is the way that is best, just so long as it is as well for baby.

Helpful Variety. Live by rule? Yes, indeed, but with judgment varying the program to suit the greatest convenience of the home. And suppose baby, having slept all night, wakens at five or five thirty, or even at four thirty, and thinks it is feeding time—what shall we do? Shall we let him fuss and yell and disturb the household during the hour till the clock strikes six? Now we'll tell you what we would do, and what we have done. We'd think it was six o'clock too, and simply feed baby and put him back in bed where he would lie contentedly or go to sleep again, while the family slept on undisturbed for another hour. But, having winked at this feeding out of time, which did no harm, we shall let the young man or the wee lady, whichever it be, go till the *regular schedule time* for the next feeding. If his second feeding is supposed to be at ten, we shall make it ten. He will go all right until that time. If he fusses a little, better fuss in the daytime when there are bright, pretty things to look at and everybody is awake, than to cry in the dark when everybody else wants to sleep. And that hour from nine to ten is often the delightful exercise and bath time with mother (see previous study), in which baby has come to be so interested that he will forget how hungry he is. Or a drink of water or orange juice between may be planned to stay his little stomach. And then, too, he will sleep a couple of hours during the morning, and won't realize the extra lapse of time. By four months, no normal baby should have more than five nursings in the twenty-four hours; many babies at this age will do nicely on four. Remember, the scales are the guide as to whether or not he is getting enough food.

Orange Juice and Water. A three-month-old baby's food program should include an ounce of orange juice daily, more if bottle-fed. It is not usually necessary to dilute this very much, perhaps not at all. Equal parts of water and orange juice will be sufficient dilution. The orange juice may be given once or twice daily, an ounce at a time, one or one and a half hours before the

next nursing. Extra water need be given him only if he wants it. It is well, at regular times, to give him the opportunity to take it; but if he refuses it, there is certainly nothing to worry about. Mothers often anxiously report the fact that their babies "will not take water." If they will not, it is simply that they do not need it. We must remember that baby's diet is 87 per cent water, anyway, and that usually he gets sufficient fluids on his regular feeding program.

Baby's Clothing. Baby's clothing, at this age, still remains very simple. In warm weather a diaper and shirt or vest are usually all sufficient, with perhaps an added garment and stockings in the cooler part of the day. While his hands should be free during waking hours, it will still be well for him to sleep in his little sleeveless dress or "sleeping bag." This keeps hands and arms protected, and prevents thumb sucking. When it is warm, the sleeveless dress may make it unnecessary for him to wear a shirt. Care should be taken that he is sufficiently warm, but he should not be covered to the extent that he is at all moist with perspiration.

Baby's Interests. Baby will not sleep all the time now, but will, in addition to his twelve hours at night, usually take two or three daily naps. During his waking hours he should be kept quiet—not jumped and incessantly played with and talked to. He may spend many a happy hour by himself in his basket or carriage on the porch or under the trees or in a light, airy room where he can see something of what is going on about him, perhaps playing with his fingers or cooing to himself. He will need little more in the way of attention than he did when he spent most of his time asleep. As he grows older, he will notice more of his surroundings. Dancing leaves, songs of birds, beams of sunshine, will interest him, or a bit of color in the way of a ribbon or ball or string of large beads will attract his attention and interest. His hands, for a time, will be the most interesting things, and soon his feet and his toes will come in for their share of attention. Soon after three months he will begin to reach for things extended to him. He will reach for the plaything hung attractively near; he will hang tightly to his rattle, and be amused by its sound. An extra pillow at his back will permit

him to sit up a little way without undue strain upon his muscles, and will give him opportunity to see more of what is going on about him. At about this age he will be able to hold his head up without support, for a time at least. He is getting near to the time when he may sit erect, properly supported with pillows. Normal babies vary greatly in their ability to do these different things; but just as soon as baby wants to sit up, there is no reason why he should not be allowed to do so, provided he has the proper support. When he gets tired, a little note of complaint in his tone will suggest to the mother that perhaps his position should be changed. Very soon after the beginning of this period, if not before, baby will show that he recognizes mother from other individuals, and will express joy at her approach, and recognize the sound of her voice. He may grieve when turned over from mother to another, and may be frightened when left alone with some one he does not know. One of the wonders of babyhood, and the greatest delight to parents, is this evidence of developing intelligence; and it is at this time that adherence to the proper program, and insistence at times even against baby's protest, will mean so much in a disciplinary way and in the fundamentals of character building.

Baby's Weight. At three months a normal baby will weigh somewhere about eleven or thirteen pounds, having gained an average of an ounce a day since he was ten days or two weeks old. His gain may not be so rapid from this time on, but up to the age of six months he should keep up a gain of about five ounces a week. His height has increased from nineteen or twenty inches at birth to twenty-two or twenty-three inches at three months.

Sun Baths. If the weather permits, baby should have sun baths. See pages 222, 229, 241. This means exposing the baby's body to the sun (with his head protected) for a certain time each day. This should be done carefully, from three to five minutes both front and back, the first day, and increasing little by little so that the sun bath lasts a half hour, and baby's skin gradually assumes the desired tan without getting a sunburn, which latter would be a serious mistake. When sun baths are impossible, it is considered advisable, by the best authorities, to give baby

cod-liver oil, and it is usually advised anyway. Begin with ten drops twice daily and increase slowly until he is taking a teaspoonful night and morning. This may be given in a little orange juice, or various cod-liver oil concentrates may be used.

Bathing. And do not make the mistake of giving this baby only warm baths. By the age of three months, if not sooner, he should be accustomed to cool and cold baths. See pages 141, 230. After soaping the little body to insure cleanliness, and immersing in warm water to remove the soap entirely, baby can be dipped into a cool bath, being vigorously rubbed during this dip, and left in the cool water only a minute. The temperature of this cool bath may be gradually lowered as days go by, until baby will take his cold dip with no demonstration beyond that of delight in the vigorous rubbing and splashing.

Exercise for Baby. Sufficient exercise should be assured for the baby by allowing him at certain regular times during the day to be placed on a wide, flat surface, perhaps on a clean blanket or sheet on the veranda, surrounded by necessary protecting bars, so that he can wiggle and change position to his heart's content. The amount of surface over which this tiny fellow will transport himself is surprising, and the necessity of definite boundary lines will be quite evident. What baby needs most during this important period of his development is proper food, quiet, regularity, and unhampered opportunity to develop his muscular system. If his routine is regular and he is given opportunity for sleep, the amount of sleep he takes will regulate itself. He will be bound to get all he needs.

Baby's Program. The suggestions given in chapter 20 may still be used as a working basis, except that, instead of being put in his crib after each nursing and expected to lie flat on his back, he will have regular times for sitting against pillows so that he can see what is going on about him. A sample program might be as follows:

5:30 or 6:00 A. M., nursing.

6:30, in crib, with extra pillow at his back, or in his carriage out with the family or on back porch in the summer mornings, or he may go to sleep again after his early morning feeding.

8:00 or 8:30, orange juice and sun bath.

9:00-9:30, on bed or sheet on floor for exercise.
9:30, bath.
10:00, nursing.
10:30-12:30 or 1:00, nap.
12:30 or 1:00, outdoors in carriage. Sun bath if not given before.
2:00, nursing.
2:30-3:00 or 4:00, nap.
4:00, orange juice.
4:00, 5:00, or 5:30, in carriage outdoors, or perhaps again on clean sheet on floor for exercise; perhaps ready for bed.
5:30 or 6:00, nursing.
6:00 or 7:00, ready for bed if this has not been done before.

Or this may be the program :

5:30 or 6:00, nursing and back to bed.
7:30 or 8:00, bath.
8:30, orange juice and nap.
10:00, nursing.
10:30-12:00, outdoors. Sun bath.
12:00, exercise.
12:30-2:00, nap.
2:00, nursing.
2:30-4:00, outdoors.
4:00, orange juice.
4:00-5:30, exercise or ride in carriage, with a little playtime.
5:30, ready for bed and nursing.

Another program could be :

5:30, nursing.
6:30, bath and exercise.
7:00, sit up against pillow, play.
7:30 or 8:00, lie, look at hands, hold rattle.
8:00 or 8:30, orange juice and nap.
10:00, nursing, play.
12:00 or 12:30, nap.
2:00, nursing.
4:00, orange juice, exercise, play, etc.

These programs, of course, are only suggestive, and may be modified. But whether one of these or another is adopted, there should be a regular program planned and held to with very little if any deviation. There should be worked out for each baby in

connection with his program the probable time and best plan for his regular bowel action.

Some Important Don'ts. Don't ever give your baby a pacifier. Don't allow him to suck his thumb or fingers, even though you must accompany your "No, no" with a snap on the tiny offending member. A little preventive discipline at this age is much easier for baby than the struggle that must follow later if the habit is once formed.

Don't make your baby a water tippler. He doesn't always have to have something in his mouth. This is not only a bad habit, but prevents him from developing interest in other things.

Don't put him to bed at nap or evening bedtime with his bottle, if he happens to be a bottle-fed baby, even though it is feeding time. Nurse or feed him first, preferably in your arms, then put him to bed without his bottle.

Don't fail to weigh him weekly, that you may know whether or not he is gaining, and how much. Have a regular weighing day, and weigh him at the same time each day. Either weigh him always undressed or with exactly the same amount of clothing on each time.

Don't fail to report to a physician if there are uncertainties as to baby's progress—if he fails to gain in weight; if he regurgitates or vomits more than occasionally; if his stools are loose, curdy, frothy, or green. One stool a day may be sufficient, and from two to four may not be too many, if smooth and of good consistency.

Don't forget that in the absence of all other unfavorable symptoms, much crying on baby's part usually means that he is "spoiled."

Learning Independence — Four to Six Months

Baby at Four Months. Once past three months, baby develops rapidly in strength and intelligence and is an ever-increasing joy. He now shows recognition of family faces and begins to manifest a decided preference for mother, much to her delight. It is the familiar face that brings from him a responsive greeting and a gurgle of glee. The strange face he looks at rather uncertainly, sometimes with evidence of fright.

At four months, baby weighs from twelve to fourteen pounds. He may double his weight at four months, if he is a bouncer or if his birth weight was a little low and he has been able, as he often is, to catch up with the average normal baby. However, to double his weight anywhere between four and six months is considered normal. The baby that weighs sixteen or seventeen pounds at four months is probably a little overweight, and will often do as well on a little less rich food supply. Such a baby as this would better be put on four feedings daily.

By four months or before, baby will hold up his head without support, but he should not be allowed to do this too long at any one time. He will reach for his toys, and show some sense of proportion and direction. He will laugh aloud, and is altogether a happy and jolly individual. He should have at least two daily naps, be outdoors as much as possible, and continue on very much the same program as outlined in chapters 20 and 21. The principal differences are that he is awake more, and is more and more cognizant of his surroundings. He is becoming self-reliant, and is able to find more of interest in the things about him, with gradually increasing powers of emotional response.

Five Months Old. At five months, many a baby will make an effort to sit alone, but there should always be plenty of supporting pillows. Baby's muscles are becoming stronger; and how he



LA TOUR

Baby is becoming stronger, and isn't going to stay "put" much longer.

does push with his little feet! He can easily be made to laugh aloud just by the expression on mother's face, and has learned to enjoy the sound of his own happy little voice; and for us it holds a wonderful charm.

He may have a tooth at this time, though the first tooth is supposed to come peeping through at six months. He will probably begin to drool more than before, and may show signs of wanting to bite on any hard object he can get hold of. Because of this, all toys given him should be immaculately clean and waterproof. Besides his rattle a celluloid ring and a spoon will be among the things that please him most.

Six Months Old. At last our baby is six months old, and we realize how fleeting are baby days. He is safely at the six-month mark, and we have little fear for his future. He has already

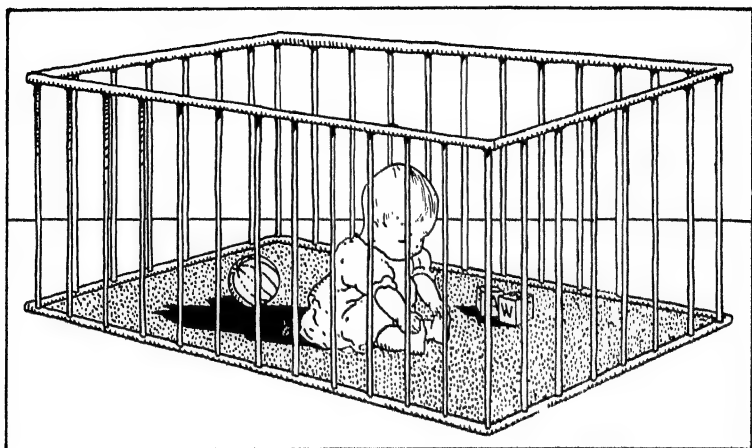


Fig. 30. BABY'S PLAY PEN

learned independence in many ways. He isn't going to stay "put" much longer. He no longer has to lie long hours on his back, but, supported by pillows against which he can rest at will, he will sit by the half hour in his carriage on the porch or out among the trees watching the leaves and birds. Mother sees him from the window as she works. He coos happily as he watches the fluttering leaves, the swaying branches, or the passers-by. If he has not done so before, he now shows definite recognition of members of the family, and reaches his arms to be taken. He is very likely to show definite fear of strangers. He is very responsive to mother's moods—interpreting differences in her tone and manner, and in this way understanding much of what is said to him. At about this age he may begin sitting in a high chair, a little while at a time, pounding with his rattle or spoon while mother works about. He is much more intelligent as to the use of his hands; they are more than just interesting things to look at. He has found out that they can be of service to him, accomplishing certain ends, and getting for him the things he wants. He reaches for and plays with toys placed within his reach, and flourishes his rattle joyously and firmly.

A Play Pen. Baby must have plenty of opportunity to develop his muscular and initiative powers. From this time on, a play pen will be one of the very finest things for him. (See Fig. 30.) It will be better if this pen can have its own floor that will be kept clean just for baby's use. But if not, it can be set over a clean, scrubbed floor, over a clean rag rug, over a sheet or clean blanket. Left alone in his pen, baby can exercise his growing powers of locomotion as freely as he should. A baby should never be put on any floor anywhere to wipe up the dust with his little hands, this to be conveyed, as it is bound to be, to his mouth. Because a baby is six months old is no reason why we should throw to the winds all our care about cleanliness.

The Nursery Chair. He is now quite able, as he has been for some little time perhaps, to sit independently on his nursery chair a time or two daily for his regular bowel movements, and to be left a few minutes while mother sandwiches in an extra little task here and there. It is often an advantage to be able to do two things at once, and now baby's growing independence makes this possible. It should be remembered that there is variation in the development of even normal babies, and that a baby may be perfectly normal and yet be a little behind in any one of the things listed as the usual standard for a given age.

Weight at Six Months. At six months the average normal baby weighs somewhere between sixteen and eighteen pounds. At any rate, he should have doubled his birth weight at this age. He has grown in length from the nineteen or twenty inches at birth to twenty-four or twenty-five inches at six months. His head, which was larger in circumference at birth than his chest measurement, now approximates the circumference of his chest. Of his little torso, his abdomen still seems the prominent part. In reality, the circumference of the abdomen is the same as that of the head and chest (or even more) until the end of the first year, when the chest gains the ascendancy.

Teething. At six months we begin to watch anxiously for that first tooth, which is likely to appear at any time, though some normal babies do not erupt their first teeth until seven or eight months, or even a little later; and we have known babies who had their first tooth at three months, which precocity is

very rare. There is no reason in the world why a baby should be sick just because he is "teething,"—scarcely more than if he were "hairing," as, of course, he is. Teething is a perfectly natural, normal process, and with a normal baby will occur almost without anyone's being aware of it, except for the general delight at the sight of those first little incisors. He will drool a little more; he will press his little gums together and bite ferociously on his celluloid ring or on any hard thing that he can get hold of. But as for his having a fever, digestive upsets, and loose or green stools just because he is cutting teeth—well, there's just nothing to it. If these conditions do occur at teething time, it is a coincidence, and the cause should be determined if possible.

Feeding. Baby is now on four feedings a day, with orange juice between,—say, from two to four ounces of orange juice a day, an hour or an hour and a half before the next feeding. The orange juice ordinarily need not be warmed, and need never be diluted. If he is a bottle baby, he is able to take straight whole milk, boiled. Of this he should get a quart a day, eight ounces at a feeding. It is well if he can have learned in the preceding weeks to take food from a spoon, and he should now begin to drink from a cup. He has from his early weeks learned to take water or orange juice from a bottle, even though he is a breast-fed baby, and now he should learn to drink as grown-ups do. From this time on, and even earlier, he will begin to take some form of food other than milk. Physicians who specialize in baby care may advise the beginning of cereal feeding even as early as the beginning of the fourth month. This is begun by giving him, say at his ten o'clock feeding, one or two teaspoonfuls of well-cooked cereal, gradually increasing to two or three tablespoonfuls. This cereal is always freshly cooked, and is thinned by the addition of a little milk. Never put any sugar in it. The finely divided cereals, as Farina or Wheatena, should be used first. Or a cereal like rolled oats is good if it is prepared for baby by rubbing it through a strainer to remove the harsh portion. The amount of cereal that baby can take depends upon his appetite, weight, and bowel activity. Loose stools may mean that he should not have so much, or that a finer cereal should be given him. There is a trend toward commercially canned baby foods. These may be used, but are not necessary.

Program. Let us plan a program for a six- or seven-month-old baby:

- 6:00 A. M., nursing or bottle.
- 6:20 or 6:30, nursery chair; then back in his crib or, if warm, in a pen with his toys, to play during the family breakfast hour.
- 7:30, outdoors or on a screened porch in his pen; if cold weather, with sweater and leggings, perhaps mittens too.
- 8:30, orange juice, two or three ounces with an ounce or two of water.
- 9:30, bath—shampoo with short hot bath followed by a cold rubbing, splashing dip; hair brushed, clean clothes.
- 10:00, nursing or bottle, and cereal, or cereal first then nursing.
- 10:20, nursery chair, unless bowels have already moved well and mother is quite sure they are not going to move again. Even so, a few minutes on the nursery chair will help to teach him bladder control, which may well be begun at this time.
- 10:30, nap.
- 12:30 or 1:00, pen.
- 2:00, bottle or nursing; nursery chair.
- 3:00, nap.
- 4:00, pen and play, or a ride in his carriage.
- 4:30, orange juice, two ounces or more.
- 5:00 or 5:30, undress, exercise, and ready for bed.
- 5:30 or 6:00, nursing or bottle; nursery chair.
- 6:00 or 7:00, bed.

If the morning orange juice is four or five ounces, the afternoon juice may in some cases be omitted. Baby's afternoon nap may be pushed to later in the afternoon. He may even be sleeping from four thirty to five thirty or six, during the family dinner or supper hour. Then he can have a little time up with daddy after supper, getting to bed by seven or seven thirty.

Bottles and Formulas

A Bottle Baby. Oh dear! Our hearts sink. Baby must be put on a bottle. There's no other way. This conclusion has been reached only after every effort has been made to avoid it. He does not gain on mother's milk—she simply does not have enough for him. Or the doctor has decided that for mother's sake the baby must have a formula. Or maybe mother went away, and there just isn't any mother. Or maybe "he's adopted." Oh yes, there are lots of maybe's. Of course we simply just couldn't imagine baby's mother would "not want to nurse him"—be too busy with social things, not want to be "tied down." Oh no, never any reason like that—just things that simply cannot be helped.

What to Do About It. Anyway, the decree has gone forth, the situation is unavoidable, and baby must be bottle-fed. First, let us give some much-needed advice. Go for this important formula to some one who *knows* about feeding babies. Don't try this advertised food, then that. Don't give him what your neighbor's baby did so well on. Don't follow Aunt Mame's advice, or even grandmother's, or be guided by your own opinions or prejudices. Go to one who is competent to take the responsibility of feeding this baby; that is, if you want a well, live baby, and if you wish to save yourself loads of trouble and anxiety and even doctor's bills. To take your baby to a specialist in baby feeding and put baby under his care is the very best, and often the most economical, thing to do. If there is no specialist available, or if his services are too expensive, go to the nearest baby welfare station or clinic. Go, even if you must travel some distance.

If you cannot possibly do this, write to some such welfare station or city, county, or state health department, and get advice. But do it quickly, for baby is waiting, and he must eat while he waits. Time is very precious. And when you write, give the following information for which anyone helping you will ask, and to send it in your first letter will save much time:



Fig. 31. Essential equipment for measuring baby's food include: measuring cup, strainer, measuring spoons, glass funnel, bottles, nipples, pitcher, spoons, and sterilized cotton.

1. The exact age of your baby. 2. His weight at birth. 3. His present weight. 4. His rate of gain during the weeks since birth. 5. How much he has gained in the last week or two weeks or month. 6. How many times a day his bowels move. 7. What is the color of his stools—green, yellow, tan, or brown; are they frothy, curdy, or smooth, of even color and consistency? 8. Are his bowel movements firm or soft or runny? 9. Are they hard, lumpy, large, or small? 10. Are his buttocks irritated or reddened? 11. How much and when does he sleep? 12. Does he cry a great deal, and when? 13. What and how much and how often are you feeding him at the present time? 14. Is he getting any extras, as cod-liver oil, orange or tomato juice, sun baths? 15. Does he vomit? If so, how often and how soon after he eats? What is the character of that which he vomits? Write, answering these questions, outline his daily schedule as you are carrying it out, and you will get advice as to what you should do.

Guiding Principles. We are not going to attempt to tell you in this chapter how to feed your bottle baby, but there are a few very important things that you should know.

Straight cow's milk is too strong for a tiny baby's digestion. It must be weakened. This is done by adding water. But simply watered milk would not give baby enough food, so the formula is increased in its value by the addition of some kind of sugar. Milk without its cream is easier to digest than whole milk. Occasionally a baby's power of digestion is such that some or even all of the cream is removed. This would, of course, greatly lessen the food value, which must be made up in some other way—perhaps by the addition of more sugar, or sometimes the ideal gain in weight for a time is sacrificed for the sake of digestion. Milk with increased cream value, as top milk, was used a great deal a few years ago, but it has been found that usually more of the lower part of the milk is what is needed rather than extra cream. The average baby can take milk as it is, with proper dilution and some sugar addition.

Plain water may be used to dilute the milk, but there are times when vegetable waters, as potato water, or cereal waters—rice, barley, or oatmeal—may be used as diluents.

Advantage of Boiled Milk. One big difference between mother's milk and cow's milk is that cow's milk forms large tough curds in the stomach, while the curds of mother's milk are fine and tender and thus much more easily digested. Boiling the milk softens the curds, making them smaller and more like those of mother's milk. Baby can take a stronger milk mixture when the milk is boiled than when it is raw. The vitamin C, which is lessened by the boiling of the milk, may be added to baby's ration in the way of orange juice or, perhaps, of potato water, or, sometimes, of both.

A Working Basis. Now with these facts in mind, we will consider a working basis for milk dilution. The number of ounces of formula that baby can take at a feeding varies with his age, and is two to three ounces more than his age in months. A formula that gives him at a feeding three ounces more than his age in months is usually safe, because, if the formula is properly proportioned, baby's appetite will be a fairly safe guide; if he doesn't want it all, he won't take it, but will leave a little in the bottle. This allows baby something to say in the matter, which isn't altogether without its advantage. When

baby nurses his mother, he usually quits when he gets through, and few measure the amount that he takes.

First Formulas. If baby must be put on a bottle at once it is safe to make his formula one half milk, one half water, the total amount for each feeding to be four ounces—two ounces milk and two ounces water. For the seven feedings in twenty-four hours, it would be twenty-eight ounces—fourteen of milk and fourteen of water. This strength should be increased until by the age of three or four weeks, he is taking a formula containing more milk, with a total for each feeding of five ounces instead of four. This is gradually increased through the weeks and months until by six or six and a half months he is able to take eight or nine ounces of straight, undiluted milk at a feeding. It is no occasion for worry if baby does not take all that is in his bottle. His appetite and stomach capacity are a better guide than any rule.

Provide for Gain in Weight. However, to keep our baby gaining, we add some kind of sugar to his diluted milk. Dextrimaltose is quite generally used, though not always, and is a safe sugar. Honey may be used, and there are other sugars.¹ For the new baby, a half teaspoonful of dextrimaltose to a feeding, or one level tablespoonful for the twenty-four hours, is the safe amount with which to start. This may be gradually increased to two tablespoonfuls. At any time the stools become soft or runny, the sugar must be decreased. As long as the stools keep formed and of smooth consistency, the sugar may be carefully increased until at the age of two or three months, three level tablespoonfuls in twenty-four hours may be used. Great caution should be used in adding the sugar. Some babies do better if they never have more than two tablespoonfuls. Rarely will baby need more than three. Then as the milk in baby's formula is increased until it gets close to whole milk, the sugar must gradually be decreased until at six months, or perhaps at six and a half months, when baby gets undiluted milk, the sugar becomes nil or is at most but a teaspoonful. So, sometime between four and six months, the sugar in the milk is decreased from three or occasionally four tablespoonfuls in twenty-four hours to none

¹ Karo is very commonly used in hospital formulas for the new baby.

or very little. At six months, or sooner, a quart of straight, unsweetened milk becomes the basis of the diet. From this time on, other substances are added.

The bottle baby begins to have orange juice even as early as one month, beginning with a teaspoonful diluted one or two times. The orange juice is given between feedings twice a day, one or one and a half hours before the oncoming feeding. Baby's food after six months will be considered in chapter 26.

The entire amount for the total number of feedings in twenty-four hours is made up once daily, usually soon after the delivery of the milk. In formulas where some of the cream is removed, it is necessary, of course, for the milk to stand long enough for the cream to rise. Care should be taken to get as good a grade of milk as possible. Certified milk is the ideal. But with the safeguard of boiling baby's formula (which not only increases its digestibility but also insures its sterilization), any reliable milk becomes safe.

To Prepare the Formula. The time having come for the preparation of baby's formula, just how shall we do it? The hands must be scrupulously clean, and a clean apron should be donned. The bottle of milk is well shaken, unless some cream is to be removed. Into a saucepan we pour out the carefully measured quantity of milk; to this we add the allotted amount of water or any other diluting fluid that might be used; then we add the amount of dextrimaltose or other sugar to be used. It may be well to mix this up with a little of the water before adding to the entire amount, but the boiling of it all nicely dissolves the sugar and prevents any lumpiness. Now let it come slowly to a boil. But before it begins to show signs of boiling, start to stir it and keep stirring until the mixture has boiled three minutes.

Then into baby's milk bottles, which have been previously prepared by scrubbing with warm soapsuds and brush and boiled or at least well rinsed in boiling water, pour the scheduled portions of baby's food. There should be as many milk bottles as there are feedings in twenty-four hours. Stopper the bottles if narrow-necked, with sterile cotton taken from a roll of absorbent cotton kept protected by its wrapping, or by special rubber covers that can be bought; but if the bottles are wide-mouthed

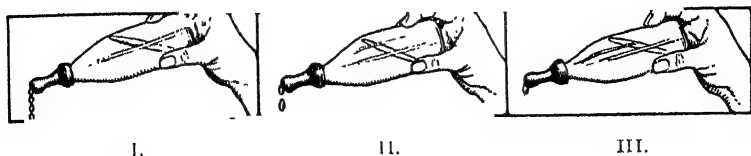


Fig. 32.

- I. Flow of milk for the very feeble baby
II. Flow of milk for the delicate baby
III. The right flow of milk for the strong baby

(and let us hope they are), cover with bottle lids or rubber covers that may be bought for such bottles, or, in the absence of these, with small dishes of any kind, as old-fashioned butter chips, can covers, or anything that can be boiled and kept clean. Let the bottles cool, then set in the ice box or in a cool place, to await the time for use. Before giving to baby, warm the milk by setting the bottle in hot water for a few minutes. Test the temperature by placing the bottle against your cheek.

Feeding Time. When feeding time comes, take the bottle, remove the cover, put on the nipple (which has been kept in the meantime in a cup or dish of boiled water to which a teaspoonful of soda or borax has been added, or which, having been well washed after its last use, is now scalded before using), and give the baby his meal. The ideal way is for mother to sit down in a comfortable chair, hold baby in her arms just as if nursing him, and give him his bottle. The position should be as nearly as possible the same as when baby gets his milk from mother's breast. Thus to baby mother is the fount, and he has the proper supervision. The milk should flow rather slowly from the nipple, drop by drop, when the bottle is held at a downward angle. If baby is delicate, it may need to come faster. (See Fig 32.) The hole in the nipple can be enlarged by using a needle that has been sterilized by boiling or by heating in a flame for a moment. After the feeding, the bottle is at once washed and well rinsed. The nipple is washed thoroughly after use, and placed again in the cup of boiled water with added soda or borax.

Washing the Bottles. Every morning before the formula is made up for the day, the bottles, nipples, and all utensils—as funnel, covers, etc.—are washed with soapsuds, boiled, and

made as clean as possible for the reception of the vital fluid. The boiling hot milk, as it is added, not only is sterile itself but has a sterilizing effect on the bottles. The bottles will not break if they have just been taken from the hot water. If possible, get Pyrex nursing bottles, then there will be no anxiety as to the danger of breaking. The wide-mouthed bottles are always better, as they are much easier to keep clean. (See Fig. 31.)

Orange Juice. It is very important that the bottle-fed baby get orange juice. Beginning at three or four weeks, he may have twice daily a teaspoonful in two parts of water, this being gradually increased. At two months we will give him a tablespoonful or more twice daily, diluted with an equal amount of water. At three months he may have two or three tablespoonfuls twice daily, in, say, an equal amount of water. This amount can be increased as he grows older. Tomato juice may be substituted for the orange juice. If he does not take these juices well, he may have from two to six ounces of potato water as part of the diluent in his twenty-four-hour food mixture. Offer him water between feedings, but if he doesn't want it, don't worry.

Formulas. Formula for *one-month-old* baby—weight about eight pounds.

Basis—4 or 5 ounces at a feeding, 6 or 7 feedings daily.

Milk 18 ounces, water 16 ounces. As this formula is to be boiled, about two ounces of water will boil away. Of sugar in the form of dextrimaltose we will add 2 level tablespoonfuls, or in the form of honey 2 teaspoonfuls, or Karo, 2 or 3 teaspoonfuls. So now we have it:

Milk 18 ounces Water 16 ounces

Dextrimaltose ... 1 tablespoonful, or honey, or Karo, 1 teaspoonful.

Put together, boil three minutes, stirring well to prevent the forming of a scum. Put in six or seven bottles. Feed every three or four hours, six or seven times a day. If baby is frail or if stools are loose, the same formula may be used, but begin with one tablespoonful of dextrimaltose or one teaspoonful of honey, gradually increasing this to two. Baby may not take all of this formula at first. Do not overurge him. The proportion of milk may gradually be increased.

Formula for *two-month-old* baby—weight about 10 pounds.

Basis—5 or 6 ounces at a feeding, 5 or 6 feedings daily. We add 2 or 3 ounces water to allow for boiling away.

Milk 24 ounces Water 14 ounces
Dextrimaltose ... 2 tablespoonfuls, *or* honey, *or* Karo, 2 tea-
spoonfuls.

Mix, boil three minutes. Put in five or six bottles. Feed every four hours. Gradually increase milk. It may be well to use only 2 tablespoons of dextrimaltose for the first day or two; then increase, if stools are firm, to $2\frac{1}{2}$ tablespoonfuls.

Formula for *three-month-old* baby—weight 11 or 12 pounds.

Basis—6 or 7 ounces at a feeding, 5 feedings daily. We add 3 ounces water for that lost in boiling.

Milk 27 ounces Water 11 ounces
Dextrimaltose ... 2 or 3 tablespoonfuls, *or* honey, *or* Karo, 2 or
3 teaspoonfuls.

Mix, boil three minutes. Put in five bottles. Feed every four hours. Gradually increase milk. Decrease the sweetening if bowels are loose.

Formula for *four-month-old* baby—weight about 13 pounds.

Basis— $7\frac{1}{2}$ ounces at a feeding, 5 feedings daily. Allowance is made for water boiling away.

Milk 30 ounces Water 11 ounces
Dextrimaltose ... 3 tablespoonfuls, *or* honey, *or* Karo, 3 tea-
spoonfuls, or perhaps only $\frac{1}{2}$ as much.

Mix, boil three minutes. Put in five bottles. Feed every four hours. Gradually increase milk and decrease sweetening.

Formula for *five-month-old* baby—weight, 15 pounds.

Basis—8 or 9 ounces at a feeding, 4 feedings daily. Three ounces allowed for boiling away.

Milk 30 or 32 ounces Water 7 ounces
Dextrimaltose ... 2 tablespoonfuls, *or* honey, *or* Karo, 2 tea-
spoonfuls.

Mix, boil three minutes. Put in four bottles. Feed every four hours.

By this time cereal is being added to baby's food, and it gradually displaces the sweet as a source of energy.

Formula for *six-month-old* baby:

Basis—8 or 9 ounces at a feeding, 4 feedings daily.

Milk 32 ounces Water 3 ounces

Dextrimaltose ... $\frac{1}{2}$ tablespoonful, *or* honey, $\frac{1}{2}$ teaspoonful.

Gradually remove all sweet.

Mix, boil three minutes; put in four bottles; feed every four hours.

These formulas for some babies may be found a little low in food value to make them sufficient for necessary gain in weight, but they can gradually be increased; and will be sufficient until word can be received from the doctor. If an increase has to be made during the period of waiting for medical advice, it is usually safer to increase the milk than the sugar. If baby is constipated, the sugar may be increased cautiously—a teaspoonful at a time. This means a teaspoonful to the whole formula, and the increase having been made one day, two or three days should elapse before another increase is made, and this only if baby continues to be constipated. If a reasonable increase in sugar does not cure the constipation, then perhaps more orange juice will.¹

It is of interest to note in studying the above formulas that the amount of milk in ounces is about two and a half times the baby's weight in pounds. As to food units, fifty calories per pound is a good working basis. An ounce of milk contains twenty calories, and a tablespoon of dextrimaltose or a teaspoonful of honey or Karo about thirty calories. So a little calculation will give one an idea as to whether or not baby is getting enough food.

Diarrhea. If baby has diarrhea or very loose stools on any of the above formulas, the dextrimaltose or honey must be omitted temporarily, and special advice obtained at once, as baby cannot gain in weight on a formula without sugar unless he is near enough six months to take whole milk. For the baby who does not take well the amount of sugar he needs to gain in weight, some form of unsweetened dry milk, Dryco or Klim, is often good. It is so easily digested that enough can be taken so that the extra sugar is not needed. It is also convenient when traveling.

¹ Other sugars are often used, as milk sugar, Karo sirup, or even cane sugar. In using cane sugar one half as much should be used as the amount called for in using dextrimaltose.

Some of the Problems

Sleeplessness. "My baby *doesn't sleep*. He sleeps perhaps fifteen or twenty minutes, and then he wakes up just as I think I am going to have a little time to get something done. He almost never gets a real nap like other babies I know about; and I'm sure he doesn't begin to get enough sleep."

First, let us decide just when and how long baby should sleep. Let us plan baby's program, and write it down on paper, with hours for feeding, bath, and sleep. If you decide that he should sleep from his bath and feeding at ten until twelve thirty, then when ten o'clock comes and he has been nursed and is dry and warm (without being too warm), put him in his crib or basket in a secluded spot, and *go away and leave him*. Tell everybody that it is baby's nap time—tell yourself that it is baby's nap time, and stay away from him. And keep on staying away until the time comes that you have decided he should wake up. Persist in doing this, whether baby sleeps or not, knowing that at least he is having quiet and freedom from the anxious hoverings of older folks. The very fact that he doesn't sleep is all the more reason why he should have this quiet time with the advantages of a rest even though without any prolonged loss of consciousness.

It is strange, but the only time we think we can let baby alone is when he is asleep. The minute he stirs we begin the extraneous titillation of his senses—we begin to fuss with him, coo at him, chuck him under the chin, pick him up. If we learn to let him alone at certain definite times of the day, we shall find that before long he will improve this opportunity to nap, and will get all the sleep he needs. If he doesn't sleep quite all we think he should, we have at least done all we can about it, and need not worry. In this regard we shall have to let baby be a law unto himself.

Crying. "Well, *my baby cries so much*. I'm sure there must be something wrong with him. He cries in the daytime, he cries at night. We never know what to depend on, and are just worn to a frazzle. What with fussing with him all day and being up and down at night, I'm positively a nervous wreck. At this rate I

never could stand it to have another baby. Oh yes, he's gaining in weight. Last week he gained eight ounces, and he never has gained less than four in any week. I'd hate to have him any fatter. It about breaks my back now to lift him. Oh no, he doesn't have any diarrhea. Yes, his bowels move once or twice a day, and the doctor says the stools are perfect. No, his buttocks never get sore. They look just as pink and normal as any baby's I ever saw. No, he never vomits. Oh, he spills over once in a while, but then, they say that's normal for babies. Yes, he looks well. His skin is clear and pink—not a sign of a blemish anywhere. The doctor says he is in prime condition, but I'm sure there must be something terribly wrong with him."

Anything to Cry About? Yes, there's no doubt but that there is, or will be if he keeps up that unhappy, discontented disposition. Baby will be a nervous wreck as well as mother. What shall we do about it? First, if the doctor says he is all right, we can be pretty sure that he is. And, after all, the signs of baby's well-being are very simple, and may be listed as follows: Steady gain in weight; a round, normal appearance of his little body; absence of eczematous blemishes or irritations in his skin, and of irritation or redness around his genitals and hips; one to three bowel movements daily, with stools of smooth consistency and normal color, varying from yellow through shades of pale tan to brown, depending on whether breast- or bottle-fed, and if bottle-fed, upon the nature of the formula; no vomiting except occasional spilling over, which we call regurgitation; mouth clean and pink, with absence of any spots or marks of irritation; no snuffles or difficulty in breathing. If, however, there is any question, baby certainly should be carefully checked over by his doctor, just to be *sure* everything is all right; and with that settled, his crying is evidently a matter of habit. Highly suggestive is the sharp, high-pitched cry of pain; the cry of temper; the fretful, tired cry; or the cry of hunger. Mother soon comes to recognize baby's ways of letting his wants be known. And baby may be hungry, even though gaining in weight. Perhaps his little frame needs to make a more rapid gain; and a little increase in his food supply, if it can be managed, may make him happy. Mother, by special attention to

her diet (see pages 132-134), can often make baby's meals a little more satisfactory.

Crying in the Evening. "Well, my baby is fine all day, but he certainly whoops it up in the evening. There is no quiet or peace for anybody between his six o'clock and nine o'clock feedings. I get him ready for bed and put him away faithfully night by night, but he cries just the same until he is fed at nine o'clock; then he settles down and goes to sleep. No, there's absolutely nothing wrong with him that anybody can find out. His program is regular, he isn't spoiled, and his gain is normal."

All right, every other possible cause for crying being eliminated, he may be hungry, as previously suggested. Mother has worked hard all day and is a bit fagged by that six o'clock nursing time and, because of this, baby's supper may be a bit short, though fortunately his other meals give him enough to keep him gaining. Just try giving him the opportunity of a little extra food after he has finished his six o'clock nursing. Prepare four and a half ounces of milk mixture for him,—2 ounces of milk, 2½ ounces of water, adding to the mixture just a bit of honey from the tip end of a teaspoon. Boil it, and give it to him from a bottle, and let him take whatever he will. If he is contented after that for the evening, and goes to sleep quietly, the problem is solved. If it makes no difference, and he cries as much as ever, do not continue it. Never give it to him until he has nursed all he will from the breast, and it will be well to report what you have done to the doctor and talk it over with him. If mother will rest in the afternoon, eat the food she needs, and take more liquids, she may increase her own milk supply, and the complementary evening feeding may not need to be continued.

Constipation. "But my baby is *constipated*. His bowels never move unless I give him a suppository or an enema."

Yes, but you must remember that on such a program as that his bowels never have a chance to do anything of themselves. Just stop the suppositories and the enemas, and see what happens. If he is getting enough to eat, as evidenced by normal gain in weight, and is well in every other way, the matter of constipation need cause little worry. Correct management of his daily program will usually overcome it.

Increase his orange juice up to two, three, four, or even more ounces daily. Hold him on his little "pottie" at regular times, or let him lie on a diaper, after his morning feeding and after one or two of his afternoon feedings. "Grunt" with him. And just to stimulate the anal reflex, you may insert, for two or three successive occasions, a soap suppository, well lubricated. After the first two or three days, use, instead, a little lubricated enema tip. Do this a time or two, then stop using any help of this kind. Simply give the baby the opportunity for bowel movement by letting him lie on a diaper or by holding him over his "pottie," or, if old enough, by letting him sit on his nursery chair at the regular time. Then if his bowels go over twenty-four hours without moving, *do not worry*. Patience is usually all that is necessary, and if baby is all right in every way, be willing to wait a day and give his bowels a chance. Overanxiety and fussing have laid the foundation for many a case of constipation. If baby is fed all right and is on a regular program, in nearly every case his bowels will come to time all right. Never begin milk of magnesia, Castoria, or any laxative—just wait.

Colic. "My baby *has the colic*." How do you know that he has the colic? "Why, because he draws up his legs when he cries; and he passes gas." It has been our observation that few babies cry without drawing up their legs. We could hardly imagine a husky baby's crying vigorously with his arms and legs relaxed. And that the strain of crying is accompanied by the expulsion of gas is quite in keeping with the increased pressure brought on by the contraction of his abdominal muscles. None of these signs are positive symptoms of colic. If the baby has no other suggestive symptoms, as diarrhea, or green or curdy stools; if his bowel movements are normal; if he does not vomit; if he is gaining in weight and eats regularly, we may forget the word colic as far as he is concerned. Of course, baby may swallow a little air when he nurses, but if he is held up over mother's shoulder for a moment after he has finished, he will expel this extra air and have no discomfort from it. If baby is being fed from a bottle, the flow of milk from the nipple may be such as to permit of his sucking a little air. The hole in the nipple may be too small or too large (see page 167), or the bottle may be

held too flat so that milk does not fill the nipple. But if, in spite of proper precautions, he tends to swallow too much air, he may be held over mother's shoulder once or twice during the period of nursing, and thus be given a chance to belch.

Giving an Enema. If, however, mother is quite certain that baby really has colic, it may be very helpful to give him an enema. This may most easily be done by using a small bulb syringe that can be bought at any drug store. Draw lukewarm

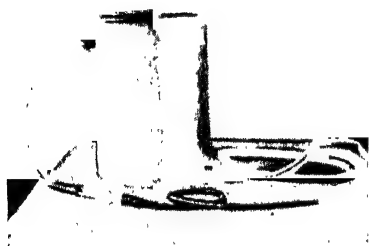


Fig. 33

ENEMA OUTFIT WITH CATHETER

water up into the syringe. Insert the well-vaselined tip, and, by pressing the bulb, gently force the water into baby's bowel. Baby's effort to expel this water will force the water out as well as any gas that needs to come, and may insure a helpful bowel action. While plain water may be used, a saline (salt) enema, in the proportion of one-half teaspoonful of salt

to a cup of water, is likely to be less irritating than the water alone. A flaxseed enema, made by steeping one or two teaspoonfuls of whole flaxseed in a cup or more of water, may at times be even better. A flaxseed enema is of special value when there is evidence of irritation in the bowel, as in loose, frothy stools, with irritated buttocks. In the absence of a bulb syringe, the ordinary enema can or bag may be called into service, using, of course, a small enema tip or a catheter. Advice as to apparatus can be obtained at the drug store. Always be sure that the can is hung low, so that there is only gentle pressure. The amount used should be only that which can be introduced easily and gently. See page 251. There is something wrong if baby is continually getting enemas. In the absence of abnormal stools or vomiting, the trouble is very likely an overanxious mother.

Refusal to Nurse. "But my baby *won't nurse*. He acts very hungry, nurses a few minutes, and then stops and fusses; he nurses a little more and fusses again. He doesn't nurse nearly

as long as he did a few weeks ago, yet he doesn't seem satisfied." This baby is probably fussing because, in spite of his efforts, he is not getting enough milk to pay him for his trouble. Often one of the first symptoms of an insufficient supply in mother's breast is this fussing of baby's over his meal. He is unhappy because the food is not there in sufficient quantity. And he may, after a few nursings of this kind, refuse altogether. In such a case as this it is very important to weigh baby frequently; and not only that, but it will be enlightening to weigh him just before he nurses and immediately after, to determine about how much food he is getting. Let mother look to her diet and increase her liquids as much as possible. See pages 132-134. Let her take more fruit, more vegetable juice and soups, and perhaps more milk. It will be very important to get medical advice at a time like this in order that baby's incomplete food supply may not continue too long. The doctor will probably plan *complementary feedings*—that is, after each nursing from the breast, the baby will be given as much of a properly prepared formula as he will take. Baby should be put to the breast regularly, and every effort should be made to increase the flow of milk from the natural source. In an emergency, one of the formulas given in chapter 23 may be used.

Failure to Gain. "My baby *isn't gaining*." This state of affairs must always be taken seriously. Medical advice must be sought at once. Efforts should be made to increase mother's milk. If this is not accomplished very soon, baby will need to be given at least part of his food from a bottle. Complementary feeding should be used first with every effort to increase the breast supply. See pages 132-134. Baby should be weaned entirely only if the breast milk has failed to the extent that it can no longer be of help in nourishing him.

Green Stools. "My baby's *stools are green*." If this is the only unfavorable symptom, if baby has not a diarrhea and he seems well in every way, this can be disregarded especially if the baby is on breast milk. The mother should be a little more careful of her own diet, and baby should not be overfed. It may be well to dilute his milk by giving him an ounce or two of water just before he nurses (if he will take it), or increase the interval

between nursings. For example, change from three-hour interval to four-hour. Give him one less feeding a day. If stools are still somewhat green, and baby continues to gain and he sleeps well, there is probably no occasion for anxiety.

Loose Stools. "My baby's *stools are loose and frothy.*" This means that baby is probably getting too much sugar in his milk. Let mother adjust her own diet so as to get less starch and sugar. It may be well to increase the interval between feedings. Or if baby is on a formula, a decrease in the amount of sugar in his formula will probably have a very good effect. See the doctor.

Diarrhea. "My baby *has diarrhea.*" This is the most-to-be-dreaded sign of indigestion. Get medical advice immediately. In the meantime let mother go on a careful diet, following principles on pages 132-134. Let baby's meals be a little farther apart and, if he is on a formula, take out all sweetening, of whatever kind, until you can get advice. But remember, baby cannot thrive on the ordinary formula without sugar, so something definite must be determined soon. Right here is where great mistakes are often made. And it is *imperative* that the *right thing be done at once.* There must be no floundering, no trying one thing then another. But, having removed the sugar, find out quickly what to do next.

Curds in Stools. "My baby *has curds in his stools.*" Again we advise an increase in the interval between feedings, with greater care in mother's diet. If baby is on the bottle, pour off the top milk and make his formula for a few days from the lower milk in the bottle. Gradually add the cream again as baby's stools get normal, stopping at the point where curds again appear. Many babies do well indefinitely on a formula made from milk from which part of the cream has been removed.

Irritated Buttocks. "My baby's buttocks are red and sore." This is from the irritation of the stools, which in this case are usually too loose, sometimes green and frothy. Study and adjust mother's diet. If baby is on the bottle, decrease the sugar. Make a big decrease at first, then gradually put the sugar back in the formula until there is again a suggestion of loose or irritating stools, then lessen the sweet slightly.

Baby can go for some time, if necessary, on diluted boiled milk. Where the formula contains *no* sugar, it can be stronger in milk. Try two thirds milk and one third water and gradually increase to, say thirty-two ounces milk and six or eight ounces water. Then, instead of sugar, give strained cereal.

Rash. "My baby *has a rash*. His skin is red and irritated." Be careful that he isn't dressed too warm. Remove any wool that he may be wearing. Give him air baths and sun baths. Let mother omit sugar, and fats, such as butter and cream from her diet. See the doctor.

Thumb Sucking. "My baby *sucks his thumb*." Keep him in a sleeping bag. See chapter 40.

Sore Eyes. "My baby's *eyes are sore*." Wash them with boric acid solution, and for a time or two put a drop of 5 per cent argyrol in each eye. Protect from the light. See the doctor.

Backache. "My baby is fine, but *I have so much backache*. It hurts me so to bend over the baby, to lift him, or to wash out his things." Do not fail to go to your doctor and have a careful examination. Have the treatment you need, even to surgery if necessary. "A stitch in time saves nine," and proper treatment now may save you much future trouble. For baby's sake as well as your own, you cannot afford to be neglectful of this. Postnatal care ranks with prenatal in its importance, and proper attention to it would make for healthier mothers and better babies.

Making Progress

A Real Individual. With baby once past the six-month mark, we feel that his care will be a little easier; and in a way it is. He is not such a fragile bit of humanity as he has been, and he has built up a degree of resistance to adverse forces that makes it possible for him to stand much more in the way of life's vicissitudes than when he was younger. Six months have done much for him. From a helpless infant cognizant of nothing, impressed only by immediate physical sensation and stimuli, with no ability to analyze, with no response but that of a cry, he has become at last a real individual with some appreciation of life, his place in it, and his relationship to other members of the family. His sensations at six months are much keener than at six weeks. He has sharply defined emotions of grief, joy, playfulness, petulance. He has developed some power of judgment and diplomacy. In fact, he has become a very wise little baby. If his training so far has been correct, he has, no doubt, learned something of the importance of discretion, and he very happily coincides with mother's decree, realizing the futility of doing otherwise. He has long since come to depend upon mother as a most wonderful and delightful individual, who personifies to him all life's comforts and joys, yet one whose will at the same time is law, his greatest happiness resting in conformity to that beneficent law.

Physical Development. Physically, he has doubled his birth weight, holds up his head, sits up alone, and probably has a tooth. As he jumps on mother's lap, he firmly braces his little feet and with very little help will bear his weight upon them. He seems to love the feel of pushing against the solid surface beneath him, and, instead of kicking aimlessly into the air as he did in the earlier weeks, he wants to kick and push against something. If placed on a flat surface, he will by no means "stay put." No one would dare to leave him alone on an ordinary bed, for he would be off it and on the floor with a terrific bump in no time, much to every one's consternation. On the floor he will roll over, hitch along, and all but creep. He will now develop muscularly in his

little pen, learning soon to pull himself up by the bars at the side. His progress is so rapid that every day brings something new of interest and delight. Hereafter he must have something to do, and keeping the young man or the young lady occupied in a wholesome way from this time on through the ensuing years comes to be our most important problem. Pleasing and wholesome occupation, with opportunity for self-initiative and development, is one of baby's greatest needs.

Toys. His toys will serve a real purpose. Not only will they amuse him, but they will help in the development of his senses. In reaching for them he will learn distance. He will learn color, shape, hardness, and softness. He will learn the feel of things,—at six months his fingers should be familiar with many objects. Blocks, spools, pan and spoon, a rag doll, colored cloth in fast colors, his rattle, a ball, are some of the many everyday things that may do good service as toys. See pages 313, 314.

Weight and Height. Baby's gain in weight will not be so rapid now as it has been heretofore. From the sixth to the ninth month his gain probably will not be more than three or four ounces a week, and after that until the first year not more than two or three ounces weekly. At six months his height will be about six inches more than it was at birth. So at six months he will probably be about twenty-five inches long. From six months to the end of the first year, he will grow about three inches more, making his height at one year something like twenty-eight inches.

A simple and easy way to measure the baby is to lay him on a tape measure tacked flat and straight on the top of a table. Place the end of the table against the wall, the end of the tape measure coming just even with the end of the table top and the wall. Lay baby on the table with his head against the wall. With your hand on his knees, straighten his little legs. Stand a book against his heels and take the reading.

Other Measurements. You remember that we learned in chapter 17 that at birth baby's head is larger around than his chest, the circumference of the chest being about thirteen and a half inches, that of the head fourteen inches. As his chest develops, it approximates the size of his head, and by the time he is

a year old they are each about eighteen inches around. The abdomen and chest keep pace with each other, and during the first year their measurement is about the same. Any disproportion among these three important measurements is a sign that something is wrong, and the doctor should be consulted at once.

Creeping and Walking. There is a great difference in the time when babies stand on their feet or try to walk. Some babies will make the effort to stand before they are six months old. Occasionally a baby will begin to try to walk at eight or nine months. And when baby of his own accord pulls himself up on his feet in his pen or by the side of a chair, there is no reason why he should not do so. It is not the early walking that causes bowlegs, but a state of imperfect nutrition that prevents the proper degree of bone hardness. Almost all babies creep before they walk, and many begin to do this, after a fashion, soon after six months, usually at seven or eight months. Almost all babies are making some attempt at walking by the age of one year, the average age of actual independent walking being somewhat later than this. Between ten and twelve months baby begins walking around chairs or anything he can grasp for support. This is one advantage of a pen. It gives him the opportunity of a promenade with the support that he needs to give him confidence. His sense of security as he holds to the railing around his pen leads him to take many a walking exercise that otherwise he might forgo.

Keep Baby Clean. Baby's normal development does not depend upon the freedom of the house. His progress is favored just as much, and far more satisfactorily to himself and to every one concerned, by his being restricted to quarters especially consigned to him, and which can be kept to a standard of cleanliness safe for baby. A picture not overdrawn is that of the nine- or ten-month-old baby occasionally seen crawling around under everybody's feet, his little dress wet from his droolings and evidencing the fact of constantly wiping up the dust and dirt brought in by many older feet. His diapers are likewise damp and gray as a result of the same mopping service. His nose is running because of the colds favored by such a routine. His face is dirty with the soil of his little hands, and in his mouth are his fingers and just anything else that he happens to get hold

of. What more humanitarian service than for some one to go to the poor mother of this child and show her the great advantage and relief of having baby put off by himself on a scrubbed back porch, well fenced in, alone with his toys, or in a good-sized pen in the back yard over a clean rug, or even in a room with the floor cleaned especially for his occupancy, no one allowed in the room except baby, who appears as monarch of all he surveys!

Talking. Baby begins during this period to say syllables, and many of them seem to be words. Fond father and mother insist that their baby of seven months talks, and maybe he does, although his first forming of the sounds "ma ma," "da da," probably mean little if anything more to him than any of the sounds that he has been making before. However, mother's and father's response to these charming efforts of baby's to talk is such that it is not long until he does begin to associate these words in a definite way with the individuals who respond to them so delightfully. Before the first year is over many a baby will really be saying "bye-bye" and a few of the more simple words. Baby will also during this period learn to reach his arms to be taken, to wave his hand bye-bye, to pat-a-cake, and perhaps to throw a kiss and play peekaboo. Anyway, he begins to respond in an imitative way to the things that he sees others do. A little effort in training will result in baby's doing such things as these much earlier than is often the case. But this should not be overdone.

Cutting Teeth. Baby will be cutting some teeth during these months. And, as we have said in chapter 22, this process need cause no trouble either for baby or for those who are responsible for his care. It is a perfectly normal process, and though he may bite his gums and possibly show a little sign of irritation, there will be nothing of a serious nature resulting purely from the teething process. If baby is sick, there is something more to blame than simply the fact that he is cutting teeth.

The first teeth appear at any time from six to ten months, and are usually the two lower central incisors. Next, about two months later, come the four upper central incisors. At a year or soon after come the two lower lateral incisors and the "eye" and "stomach" teeth.

Learning Control. During this period of rapid development baby will become more and more self-assertive, and it is a wise mother who gives him the right training during this time. His days go by with unceasing regularity, baby always being held to a regular program with its character-building discipline. He has long since learned bowel control, and has his regular times on his nursery chair for this function. And during these months it is comparatively easy to teach him to empty his bladder when placed upon his nursery chair. There will be accidents in between, of course, but at least baby will know why he is placed upon his little chair, and more and more he will come to develop the control that will help him to wait for the proper time.

However, no mother should be discouraged if she finds it impossible to teach her baby bladder control as early as she thinks she should. There is a great difference in babies—in the strength and responsiveness of their nervous systems; and there is no need for worry if baby simply will not learn as soon as we would like to have him, but insists on wetting himself all through these months. It seems to be more difficult to train the bottle baby than the breast-fed, and mothers do say that bottle babies are always wet. So we shall simply do the best we can, and not nag baby or use up our time or nervous energy by standing over him continually for fear he will wet his diaper. We shall keep him on a regular program, with a regular time for sitting on his chair. Give him reasonable attention, without the nervous strain of excessive anxiety, and he will come out all right.

Physical Examination. Baby should have an occasional physical examination. He may be taken regularly to the welfare clinic or the family physician, and if there is any local irritation or nutritional fault it will be determined, and any abnormal condition corrected. Being assured that all such conditions are properly looked after and that baby's daily routine is normal, we shall accept him as an individual—a law unto himself. And gradually, under such conditions, the baby who is born with perhaps not the amount of nerve strength that we would wish him to have, will come, in the end, either in this year or in the years to come, to approximate more nearly the normal and our ideal for him.

Feeding and Weaning

Food Other Than Milk. At five or six months our baby is ready for something in the way of food besides milk and orange juice. If breast-fed, he is still nursing every four hours, but this should be usually four nursings daily instead of five. He is getting from two to four ounces of orange juice daily, perhaps more. If he is a bottle baby, having been weaned early, he is able to take one quart of whole milk a day. This is boiled, put in four bottles, and baby is fed four times during the day at four-hour intervals. This quart of milk is to be the basis of baby's diet for months and even for years to come, but whether breast- or bottle-fed, baby should have from this time on, food in some form in addition to his milk. He may have even a few ounces over his quart, especially if he is taking milk from which part of the cream is removed.

Cereal. We shall add cereal, first in the form of some finer cereal as Wheatena or Farina. This is well cooked, and the first time baby is given one teaspoonful thinned with a little milk. This feeding is best given in connection with his ten o'clock nursing or bottle, and gradually it is increased to two or three tablespoonfuls. There are other cereals on the market of about the same fineness as Wheatena that may be used instead. Rolled oats are soon added, or may be given first, but should be rubbed through a fine sieve so that all coarse particles are removed. About this time baby may be given after any one of his feedings a bread crust, hard cracker, or piece of zwieback, to suck or to bite upon. Soon, instead of regulation cereal, he may have bread and milk; or boiled milk with well-toasted bread may be given him in the form of milk toast. His breadstuffs and cereals should preferably be of the whole-wheat or other whole-grain variety. Canned baby cereals may be used but have no special advantage.

Vegetables. When baby has become accustomed to his cereal, say, in a week or two after cereal feeding has been begun, he should begin to have vegetables. These may be given him at his two o'clock feeding or as part of his six o'clock meal. All



LAMBERT

Soon after the age of six months, baby is ready for something in the way of food besides milk and orange juice.

vegetables should be well cooked, thoroughly mashed or made into a *purée*, thinned perhaps with a little milk, and fed to him with a spoon. Again it will be well to begin with a small amount, about a teaspoonful at his two o'clock nursing or feeding, gradually increasing this to two or three tablespoonfuls. The vegetables should have a little salt added, but no butter or other fat. It may be well to begin with fluffy baked potato, to which a little milk has been added. Then a little spinach or mashed carrots, or *purée* of string beans may be mixed with the potato. Gradually the amount of baked potato is lessened until baby begins to take any vegetable by itself. When he has become accustomed to several vegetables, it is well to alternate them. Baked potato may take its turn during the week, or it can be mixed with the other vegetables, but should never be used to the exclusion of or in excess of other vegetables. *Purée* of peas may be added to the

list, and even cauliflower, by, say, nine or ten months. It is very important that baby learn to like these vegetables. This, once accomplished, will mean a great saving of trouble in after years; and at this time in baby's development it is essential that he have the mineral salts that may be supplied him in these important foods.

Learning to Drink. If baby has any tendency toward constipation, or if he seems to want more orange juice, he may be given six or even eight ounces daily. He is learning to take his food with a spoon, and should be taught during these weeks to drink from a cup. It is much better to teach him to drink now than to wait until he is a year old, or older, and then make the effort to wean him from the bottle, without any previous preparation. He may take water from a cup, some of his orange juice, some of his milk—just a sip or two at a time at first, but gradually learning to take more in the same way.

Weaning. Any time after six months baby may be weaned with safety, although ideally he is supposed to be nursed until nine or even ten months old. In beginning his cereal and vegetable feeding, it is usually best to give him his extra foods before he nurses, or else, his appetite being satisfied with milk, he will have little relish for anything else. Very often with these additional feedings, the amount of breast milk taken will gradually decrease, and it will be quite all right to encourage him more and more to drink milk, which usually is safer and more easily digested if it is boiled. His amount of cereal will gradually be increased until he may take a third or even a half cupful, and his vegetables likewise. He will take more and more milk on his cereal, and from a cup; mother's milk will become less and less, until, when weaning time comes, there will be no trouble in making the change.

Weaning baby in the natural, easy way we have outlined makes no trouble for anybody. The transition is gradual. Mother often finds herself without any milk to speak of when the time comes for finality. But if her milk is still quite free at this time, she may begin by omitting one nursing a day, then another. And as baby's nursings are only four daily, it will be

but a short time till they all can be omitted. And when, in the first few days after weaning is supposed to be complete, she finds unexpectedly that the supply has accumulated to the point of her discomfort, she may nurse baby a time or two perhaps surreptitiously. Neither she nor baby will mind. If her milk persists, however, a snug breast binder and the restriction of her liquids for two or three days is usually quite sufficient to settle the matter. Nursing babies that have learned to drink early may get past the weaning time without ever having needed the bottle except for the earlier allotments of water and orange juice; and the nearer baby is independent of the bottle by the time he is one year old, the better it is. The farther into the second year he gets, still depending on it, the more difficult becomes the weaning from the bottle. This is a much bigger problem than the weaning from the breast.

Water, Fruit Juices, and Fruit. Now that he has begun to take solid food, it will be quite important that he have water every day. It is much more important now than it was when he was on a formula that was largely water. Several times a day he should have water given him, and he no doubt will soon make his desire for it known. During this period baby's fruit need not be limited to orange juice. After he has become adjusted to his cereal and vegetable diet, he may have scraped apple and apple sauce in connection with his cereal meal. And his evening bottle may be preceded by scraped apple. He may have other juices than orange juice, as tomato juice, prune juice, unsweetened pineapple juice. But no fruit juice should entirely take the place of orange or tomato juice. These are more sure to contain a sufficient amount of the vitamins he needs. He should have at least two ounces of these particular juices daily.

There will be practically no change in the baby's feeding program until he is about a year old, at which time we shall plan for him to have three meals a day. Occasionally a well-nourished baby will do well on three meals a day at ten or eleven months. The details of the change from four to three meals will be discussed in chapter 31.

Baby's Stools. His stools should still remain formed, but

his greater variety of food will cause a variation of color in them, and small particles of food may be seen. If baby seems constipated at any time, an increase in his fruit juice or in his vegetables is usually sufficient to correct the condition. It may be well to give him more in the way of scraped apple or apple sauce. It is easy to make the mistake of giving baby too large an amount of cereal and not enough of the fruits, fruit juices, and vegetables. A result of this is sometimes constipation.

If Overweight. Suppose baby is overweight. If baby tends to become too fat, he may be given less cereal and now and then for a few days or even weeks he may be given milk from which more or less of the cream has been removed. One of the great advantages in milk feeding for any individual is this ability to change the caloric value of the milk by removing or adding cream. It is the bottom milk that contains the important building elements. The cream simply adds to the caloric, or energy, value; and when more energy value is given than is needed, so that an excess is laid up as fat, it is time to decrease this particular element. We may do this very satisfactorily by skimming the milk. We must not forget that cream contains valuable vitamin A. But if baby is getting his juices and vegetables as well as cod-liver oil, he may still be getting a sufficient amount of vitamin A. In keeping a baby for any length of time on skim milk care should be taken to assure him ample vitamin content by giving him freely of orange juice, vegetables, or vegetable juices, and, perhaps, cod-liver oil. If baby's stools are too loose, his fruit and juices may be decreased temporarily; but there is no safety in continuing baby long on a diet containing little or no fruit value. Such a situation as this calls for medical advice.

Day by Day

After Six Months. Once six months old, baby grows up fast. Life becomes more and more interesting to him as the days go by. He becomes more self-assertive; he knows what he wants and begins to demand it, and it is not always so easy to hold him to a regular program as it was when he was tiny. Nevertheless it is just as important, and even more so, that his daily routine be systematic and regular. He is much happier when this is so—develops more normally, has a better disposition, and mother is much more worth while because she knows what she can depend upon.

Our Plans for Baby's Care. What shall we do with him, and where may we expect to find him at any given hour of the day? He is a darling chunk of seventeen or eighteen pounds, as mother begins to realize in her lifting of the precious load. He sleeps through the night beautifully, and awakens around six o'clock. With his disciplinary program of the previous months, he has learned self-reliance and really enjoys his own company. So the first sound that we hear from him may be that of his gurgles and coos as he talks to himself. If he is not rather secure in his sleeping bag, he may pull himself up by the side of the crib and crawl through or over the bars! He is very happy when he sees mother coming, and has a good appetite for his breakfast. This is a nursing of mother's milk or eight or nine ounces of boiled cow's milk, after which he is given a bread crust on which he delights to exercise his teeth and gums. Having slept all night, he needs a thorough changing, and is not at all averse to from ten to twenty minutes on his nursery chair while mother picks up things or perhaps starts the family breakfast.

In His Pen. Then he is dressed with due regard for temperature—not too many clothes on a warm morning or too few on a cold one, and is put in his pen for exercise while mother finishes breakfast. There will be many a warm morning in summer when a sleeveless shirt and diaper will be all he will need to wear, or perhaps just the diaper. This pen may be in

the house or out of doors, depending upon the weather. Whenever the weather permits, baby should be out of doors. His pen may be on the back porch, the floor covered with a clean rag rug or special blanket used for that purpose, being sure that the blanket is always folded with the top side in when it is put away. Or the rug on the floor of the pen may always be covered with a clean sheet. Here baby, with his rattle, his pan and spoon, his string of spools, his wooden beads, or his crumply cloth, may have a wonderful time. As he pulls himself around or draws himself up by the protecting bars, he develops more and more strength; and, if he has never been accustomed to having people fussing around him, he will be happy and contented for a long time.

His Bath. About eight o'clock or sooner will be a good time him to have his bath, although it can be postponed another hour or hour and a half if mother so desires. Or perhaps mother may find it more convenient to give him his bath in the afternoon or evening before bedtime; or she may like to give him a bath the first thing in the morning. See page 146. If he does not have his bath until nine thirty or later, it will be well for him to be taken from his pen about eight o'clock, given a bottle of orange juice, and put to bed for a nap until bath time, after which he will enjoy a play in his pen. But we will suppose his bath is at eight. This will be followed by his orange juice, and he will sleep from that time until ten. He is not such a delicate piece of babyhood as he was in chapter 20, and he may have his bath in a more rough-and-tumble way. Nevertheless, the program is the same—a thorough soaping of his scalp and body creases, careful washing of his face, the cozy warm bath for a few minutes, and the quick, splashing cold dip as a wind-up. Baby enjoys all this very much, the cold part just as much as what has gone before. In fact, he may get quite hilarious with delight as he splashes in the cold water. Thoroughly dried, fresh shirt and diaper, stockings if weather is cold, into a fresh sleeping bag, his orange juice or nursing, as the case may be, and off he goes again into the land of nod. If he is sound asleep at ten o'clock, his ten o'clock feeding may be given him at ten thirty, his next feeding time being two o'clock at usual.

The Middle of the Day. At ten o'clock or ten thirty he has his midmorning meal which, as we have said, consists of two or three tablespoonfuls of cereal with milk, and his nursing or bottle. Again he is put on his nursery chair, and then out in his pen, or perhaps in his carriage or high chair, though this latter should not be for long because it does not give him the opportu-



READY FOR HER SUN BATH

nity for muscular development as does the freedom of the pen. He may be put in his pen first for an hour or two and then in his high chair for a while where he can enjoy watching mother at her work. Sometime during this middaytime interval he should be given a drink of water, and should be encouraged to drink it from a cup. Or he may have his second allotment of orange juice, though this is usually given in the later afternoon. Mother knows her baby pretty well, and can tell if he gets sleepy and needs to be put to bed sometime between twelve and two for another nap. But remember, if this is the plan decided upon, it should approximate the same regular plan day by day. Sometime during the morning hours, depending on the sun and the weather, he should have his sun bath.

The Afternoon. At two o'clock he has an important meal. This may be a nursing or eight ounces of boiled cow's milk; but this should always be preceded by his daily allowance of vegetables—two or three tablespoonfuls of any vegetable that can

be mashed or made into a *purée*. He may also have at this time another bread crust, piece of zwieback, or unsweetened whole-wheat cracker. Again he is put on his nursery chair. And if he has not slept between ten and twelve, he will need to be put to bed for his afternoon nap. At four or four thirty he will have water or orange juice, and then for an hour or an hour and a half it will be very well if he can have a ride in his carriage and a play or a loving time with mother or whoever the lucky big member may be,—just whatever mother would like or finds easiest to plan for him to do. At five thirty he has all his clothes off and his back rubbed, is put on his nursery chair and then into his night clothes and sleeping bag, has his final nursing or bottle, and is put to bed for a peaceful twelve-hour sleep. Sometimes baby may need a second bath. At the close of a hot day, for instance, a second bath may be a very restful thing for baby at bedtime. This, of course, is just a quick dip, and need take very little time. If for any reason it is much more convenient, there is no reason why baby's vegetable meal should not come at six o'clock instead of at two.

At Night. Some babies will sleep all night long without changing. Some who get pretty wet will fuss a little, and will need to be changed once during the night. It may be a good plan for mother to change baby before she goes to bed. If that is done, she may, with an easier conscience, sleep undisturbed until morning. This changing should be done very quietly, without any talking or even smiling, and baby usually will not pay enough attention to be thoroughly awakened. On such a program, the care of our seven-month-old baby is simple.

Later Months. As baby grows older—eight months, nine months—there is little change in his program. He will eat more, sleep a little less, and be noticeably heavier when he is lifted. But the same regular program will be followed, and he will very contentedly enjoy it. As he gets to be eight and nine months old, his increasing strength will make it necessary to watch him a little more carefully to see that he does not crawl over the side of his crib or over the top of his pen, or out of his carriage, and in this way get many a bump. He will try standing on his feet. With growing independence he will make greater effort to con-

fellow is no doubt very fond of his cereal, and perhaps will take a cupful or more of it a day if he has the chance. We will decrease his cereal, say, by half, and perhaps double his vegetable ration. If he is especially fond of potato and is getting a good deal, we will give him a very little potato mixed with his spinach and his carrots, but will not give him potato by itself; and perhaps we will take it away entirely for a time. We will give him more fruit, perhaps a larger serving of apple sauce in connection with his cereal meal. A few days on this program, and we will see that baby is just as happy as before, but that his weight is having a chance to adjust itself; and often other symptoms that go along with too much fat will disappear. When it is evident that he has gone long enough without gaining, or when he shows definite signs of hunger, it is very easy to put some of the cream back into his milk. One interesting thing about this quart of milk is the way in which it may be adjusted so as best to fit the child's needs for development.

When Baby Won't Eat. There is the baby, of, say, eight or nine months, who "will not take her formula." Though everybody knows that she should be having eight ounces of milk at every feeding, it is impossible to get her to take that much. Says her despairing mother, "She takes three or four ounces and stops, and I can't get her to take any more." We look at the baby, and find her well nourished, with nothing perhaps very definite in the way of other unfavorable symptoms. We question the mother carefully, and find that the baby's "formula" is not, as it should be, simply straight milk, but that this baby is still on the formula that was given maybe two or three months before. We find that it contains from three to five or six tablespoonfuls of dextrimaltose or other sugar. Besides this, the mother, in her anxiety to have the baby gain, may have used top milk. No wonder that the little tot cannot drink all the concentrated formula! Her appetite is cloyed by the excessive fat and sugar, and she is not able to take as much of the milk itself as her growing body needs. Though she may be plump and round and appear well nourished, yet if she develops fat without getting enough of body-building material, she has not the resistance to the colds and infections with which she is bound to come in contact in

greater or less degree. We will at once put this baby on unsweetened milk, perhaps milk from which some of the cream has been removed. It will not be many days before she will drink it all greedily, and still have room for something else.

Colds and Infections. Speaking of colds and ordinary infections, baby is sure from this time on to have more and more opportunity to come in contact with such undesirable and ever-present dangers. What can be done to minimize these and safeguard him from more serious things? As an infant he was scrupulously clean, away from older children, and separated from dangerous contacts. Now as he emerges from his seclusion and takes his place with the other members of the family, he becomes heir to family infections. He gets a cold, or he gets the measles or whooping cough or chicken pox or whatever there is to be had. Fortunately, family opinion still protects him to an extent from the recognizably contagious diseases, and he is kept away from other members of the family having them. But from the many grades of respiratory infections that come under the head of colds, baby has very little protection, and few grown-ups realize what a really serious matter it is to pass on to this youngest member whatever type of infection they may have running rampant in their own respiratory passages. As baby is about on the floor, or even in his pen, with people coming and going, patting his little fingers, kissing his hands, picking him up, and kissing him,—maybe even on the mouth!—breathing in his face, we can only wish him the good luck that his resistance is high and that he does not get too many really vicious “bugs” at one dose. Even under a minimum of such conditions, it is impossible to hope that baby will not come in contact with many unfavorable germs of infection.

When the Older Folks Have a Cold. If baby’s program and food are such as properly to develop his body and strengthen his powers of resistance, he will need to have very few of these unfortunate conditions passed on to him; that is, if he can be protected from his careless elders. It should be definitely understood that anyone having a cold must “keep his distance” as far as baby is concerned. If the other children have colds, they are to stay away. If daddy has a cold he should by all means, forgo

the pleasure of having anything to do with baby. If mother has a cold, woe be it! Baby is bound to get it unless mother is very, very careful to wash her hands before she handles him, is very particular not to breathe in his face, and uses every precaution that she may not pass the germs on to him. If it is possible for her to have some one else care for him during the time she has a cold, it will be very much better.

Is It Only a Cold? It certainly is of the utmost importance that this wee tot be protected from the infections that may prove so vicious when once they get the better of him. Colds, with their possible complications, are serious things with a baby. And as practically all the infectious diseases of childhood begin as respiratory infections, it is impossible to tell whether the child with a running nose or a cough has a common cold or whooping cough, measles, diphtheria, or scarlet fever. Baby's life is too precious for any chances to be taken. With a little forethought, few babies at this age need get any of these diseases that may prove so serious. Fortunately, baby, properly fed, with his sun baths, cold baths, and fresh air, gradually grows more and more resistant to colds, and so, under these conditions of health, when he does get a cold, it is much less liable to be prolonged or attended by serious complications.

Vaccination and Toxin Antitoxin. By six months, or before, baby should receive the recognized methods of *immunization*. Pertussis vaccine for whooping cough, toxoid for diphtheria, vaccination for smallpox, and perhaps others. This valuable preventive treatment can be given by your family physician or can be received with very little, if any, expense by application to your health department or nearest baby welfare station.

Constipation. If baby is constipated during these months increase his fruit and orange juice, even to the lessening of his cereal food if necessary. Persist in the regular habit time for stool action, and do not be overanxious. Give nature a chance.

When Baby Does Not Gain. Sometimes on a seemingly correct program baby does not gain as fast as it seems he should. Our baby girl perhaps isn't particularly interested in taking the amount of cereal we should like to have her take. Her dainty

appetite is not equal to the bulk of food necessary to keep her gaining sufficiently. The cereal value of her food may be supplemented by giving her from a teaspoon a little honey after each feeding. In this way she may take one or two teaspoonfuls of honey daily, with its added caloric value, without perceptible increase in her food bulk. Better to add it in this way than to put it in her milk or on her cereal, which method would have the disadvantage of educating her to like her food only when sweetened. If stools at any time become loose, or if there are more than three stools daily, it would suggest that perhaps too much sweet is being added, and the honey should be discontinued.

Teething. This second six months of baby's life is teething time, and baby should have two teeth, if not by six or seven months, at least by eight or ten months. If teeth are slow in coming in, it suggests the possibility of an inadequate mineral supply. The daily ration must be checked carefully to see that ample vegetables and milk are being given. Cod-liver oil may need to be pushed, and the sun baths should be persisted in. A general hygienic program that will insure a husky, hardy baby is the surest means of encouraging proper dentition as well as proper development in every other respect.

Going on His Own

The First Birthday. Baby is one year old to-day! How proud we are of him! We realize that he will not be a baby much longer. And how proud he is of himself! Already he is thrilled with the ambition to be a "big boy," and rises to his most chesty height at the merest suggestion. We were so thankful when he lived safely through his first three months of fragile infancy. At six months we had begun to feel that we could put real dependence on his developing hardihood; and now we feel the joy and satisfaction of actual achievement in that, as the result of faithful effort and constant vigilance, we have our baby safely established at the age of one year.

New Problems. But with baby past the pitfalls of the first twelve months, we must face new problems, and we realize that in meeting baby himself as an independent individual we have problems of personality and psychology that are far more difficult to meet than were the more purely physical uncertainties of our baby whose age we designated in months. Much of the first year, baby has been a comparatively helpless individual, dependent even for his location on those responsible for his care. Now he is learning the delight of going after what he wants, and is thrilled with the spirit of adventure and achievement and acquisition; and it becomes very evident that he needs a guidance and a directing care that have not been thought of before. Now that he has come to the time when he must begin to learn to "go on his own," his powers of judgment and self-control must be developed in the proper way, and this is the transcendently important thing with which we are confronted at the beginning of this second year; and this is the thing that is almost always entirely neglected or imperfectly accomplished by those who should have and do have baby's interest most at heart.

The Neglected Age. With this year begins what is often spoken of as the neglected age. Up to this point baby has been reared by schedule, fed by rule, bathed by the clock; but now, the first year over, we breathe a sigh of relief and feel that we

can relax our vigilance. Nothing much can hurt him now. He can eat dirt, apple cores, chocolates!—anything and everything he takes a notion to eat. At this age he begins to assert his individuality, and demands the rights and privileges of elders. He wants everything he sees on the table, and usually gets it, and begins to protest vigorously and vociferously against the things he suddenly decides he does not want. He seems to feel the change in the parental atmosphere; and, whereas during the first months he took gratefully whatever was offered him, he now makes up his mind that he “does not want his milk” or he “does not like his vegetables,” and, to put the matter plainly, he begins to find out that he can do about as he pleases and eat what he wants. The cocoa and the pancakes of his elder sister he cries for and gets, and the plainer food of bygone days he often spurns.

Venturesome. Then, too, he becomes very venturesome about this time. He learns to walk, and his toddling footsteps take him far and wide. He makes the most interesting discoveries: there are papers and books to be pulled down; the corner of dresser scarf or tablecloth is temptingly near for his tiny fingers to clutch at and pull. He is no longer content to sit docilely in his carriage or chair, but must rise up betimes, much to mother's fright and his own grief when he gets the disciplinary fall and bump.

Keeping Track of Him. And dirty! We have been accustomed to his immaculate little self. But who is this little ruffian with besmeared face and dirty hands, with innocent eyes and busy feet? He is into everything—into the sewing machine drawers that pull out so easily, into the coal bucket, into the mop water. We simply cannot keep track of him. And he is so cute and so clever! We try our best to be stern, but his quick eyes catch the look illy concealed by our attempt at firmness, and he daringly tries again the thing from which he has been sternly commanded to desist. Just as long as he sees a twitch in the corner of mother's mouth or the laugh in her eye, he will attempt the taboo. “No, no, mustn't stand up in high chair!” “No, no, mustn't pull the book down!” “No, no, mustn't stand up in bed! Lie down; go to sleep. Mamma spank!” (But she

can he very easily be cajoled into doing so. But four- or five-year-old brother or sister will do so, and be most proud.

Playthings. Great effort should be made to keep baby's play places clean and free from dangerous dirt. The pen is still useful. It can be changed from place to place,—on the porch, in the back yard on a grassy plot,—giving a variety of location and scenery. Very substantial playthings there should be, preferably those made of wood, and always washable. Those made of rubber and celluloid may be good, though care should be taken that the celluloid ones are not those that baby can easily bite and disfigure. Toys with fuzz on them may be dangerous, as baby is so likely to pull off the fuzz and swallow it. The time-honored blocks—plain white or with their animals and lettering waterproof—come in now for good service and much enjoyment. The time is near when a sand pile, with its clean white sand, will afford most delightful and wholesome pastime, assuring for baby more sunshine and outdoor air.

To Develop Sturdiness. His regular nap time should in no way be interfered with. His bathing must be regular, even twice a day if his adventurous life leads to conditions that call for an extra bath. Sun baths, cold water, and good food, with proper discipline and daily routine, help to make this second year of baby's life the period during which any shortcoming or handicap resulting from mistakes of the first year may be overcome, and baby may develop a hardiness and sturdiness, which, perhaps in his tender weeks and months, we feared he might not be able to attain. A neglected age? Never! The same watchful care given him during his first year is continued on into his second. He becomes more fully aware, with his growing intelligence, that life has its restrictions as well as its privileges, and that it pays to check his impulses. He learns that the mother dear who means so much to him, and the daddy too, are higher beings, whose will must be obeyed. And with this growing conviction, and acquiescence in it, he discovers, even at this tender age, the way to life's truest happiness.

Growing Interest. Two years old finds him beginning to grow up, oftentimes with many questions—mostly in the form of "What's 'at?" At this age he begins to feel a sense of his own

individuality, and delights in aping his elders. He is so happy to do things for himself ; and such a nuisance he is when he wants to help with everything that mother has to do ! All of the many things we will try so hard to get him to do a few years hence he will now do with the keenest interest and pleasure. He understands more and can be taught to do far more than, unfortunately, most babies have the opportunity of learning and doing. It is important that this desire to do be taken advantage of, and baby be taught to use his latent powers in every way possible. At no time in his later experience will positive training accomplish so much with so little effort. It may take a little extra time, but it will be time well spent. See chapter 42 and last part of chapter 45.

On through the third year this investigative and initiative interest grows, until at the age of three he has attained a state of understanding and discretion that makes limitless the possibilities of teaching him. The plasticity, alertness, and eagerness of his little mind make this third year a period of invaluable opportunity as far as important foundation stones in his education are concerned. Well, indeed, may it be if the second and third years are not two of the wasted years that we hear about, but rather that they are full of the things that will mean the most in baby's all-round development.

Through the third year the same regularity of program is continued, and things are carried out in much the same way. More and more the child comes to fill an independent place in the home, coöperating with family routine, learning his little responsibilities, until, the third year over, we realize that our baby has left us and that we have in his place the little boy (or the little girl) whom it will be our joy to guide in the same constructive way throughout childhood years.

Development

Baby's Weight. At one year our baby weighs somewhere between twenty and twenty-five pounds. He is supposed to double his birth weight at five or six months, and treble it in a year. During the last three months of the first year baby has probably been gaining only two or three ounces a week, and he continues to gain at about this rate for a time as he enters the second year. But his gain is not always regular, and for a few weeks now and then he may gain very little in weight, perhaps none at all. Many otherwise normal children do not gain in weight during an entire summer, the rate of development often being more rapid in the autumn and winter. If he seems to be developing normally in every other way, stationary weight for a few weeks may be no cause for anxiety. His average gain during the second year is about two ounces a week, so that at the end of the second year he weighs about six pounds more than he did at its beginning, his weight being somewhere near thirty pounds. The child who, because of illness or a poor start is underweight, is the one who will make the most rapid strides and the greatest gain under conditions that at last have been found ideal for him.

Baby's Height. During the first year his total gain in length or height has been about nine inches, so that by the end of the first year his height is around twenty-eight inches. See page 182 for method of measuring. During the second year his gain in inches will probably not be more than three or four, making his height at the age of two years, thirty-one or thirty-two inches. This may have normal variations. Baby may have been short at birth. He may never have been intended to be a tall individual. So, everything else being normal, a height less than the average may be due to family type.

Measurements of Chest, Head, and Abdomen. At the end of the first year the measurements of the chest, head, and abdomen are the same, and each is about eighteen inches in circum-

ference. They continue to be about the same proportion until the end of the second year, when the increased development of the chest makes the proportion more nearly that of the adult.

Changes in Head and Face. The soft spot on the top of baby's head, which, during the first year, has not changed much, now begins to grow smaller. At about nineteen months it disappears. This time of closure varies, but any evidence of a soft spot at the age of two years may be considered an abnormality. Baby's face has all along been small in proportion to his head. During the second year the downward growth of the face, with an increase of its size as related to the size of the cranium, is a marked feature of development.

Walking. The beginning of baby's second year may find him walking. There is the occasional baby who walks very young—one we knew walked like a grown-up at nine months; there was no uncertain toddling about it. It is not uncommon, however, for a baby to wait until the fifteenth or sixteenth month before he begins to walk alone. Very often this is because he has learned to creep well, and is so satisfied with this means of locomotion that he does not make the effort to walk. The baby that has never crept much is likely to walk sooner than the expert creeper. The large, fat baby may not be so steady on his feet as the lighter, more agile one, and therefore may not walk so early. In this, as in many other things, it is wise to let nature be the guide, and give baby a chance to be a law unto himself. If he wants to walk while young, let him. If he is reluctant and slow, there is little advantage in overurging. If by sixteen months he shows no desire to walk or makes no effort to do so, it will be well to have him checked over carefully by the doctor.

Baby's Spine. During the second year there is an interesting change in the contour of baby's spine. At birth there are none of the natural curves seen in the adult; baby's back is perfectly straight. As he begins to stand, the normal curves in the spine begin to appear, and gradually show more during the second twelve months. They are not fully developed, however, until later.

Talking. During this interesting period baby usually begins to talk. He may have said a few words earlier than this. He

has, no doubt, been saying the syllables "ma ma" or "da da" for some time. His first use of them was probably without any particular reference to mother and father. They were simply the first consonant sounds he could make, his earlier sounds being those of vowels, "aa" and "oo," with occasionally the use of the consonant "g," as in "goo." It was, no doubt, baby himself who coined the words "mamma," "papa," and "daddy," and this is doubtless why the first words of a baby are the same in every language. Soon there is evidence that he is using these words intelligently, and he adds others, as "bye-bye." At one year he usually has in his vocabulary a number of simple syllabic words—syllables peculiar to himself—that mean mother, daddy, sister, brother, grandma, and other familiar persons and things. By such simple words as "home," "walk," "go," he indicates his wants. From eighteen months to two years he begins putting words together to make sentences. From this time on his ability to talk increases rapidly. This ability varies greatly in normal babies, and failure to talk does not necessarily mean lack of mental ability. Some very normal children do not talk until they are two years old or more, but give every other evidence that they understand what is said to them. One little girl we knew worried her parents very much because of her failure to talk until nearly the age of three years; but she showed no lack of normal development in any other respect as compared with other children of her age. Girls, true to their femininity, seem to talk earlier than boys. When baby talks and what he says must naturally depend much upon the amount and character of the conversation that is carried on in his presence and often directed to him.

Teeth. At one year baby usually has at least six teeth, though occasionally we find a child who seems very normal and is only beginning to cut his teeth at this age. This delay in dentition should be very thoroughly investigated, and special pains should be taken to see that baby is getting all the mineral-supplying foods he should have,—plenty of milk and vegetables,—with sun baths and cod-liver oil. See page 230. He may have more than six teeth at twelve months; he may have twelve. The table on the following page shows the usual order of dentition.

TEMPORARY TEETH—FIRST DENTITION—TWENTY IN NUMBER

	DENTAL PERIODS	GROUPS OF TEETH
I	6 to 8 months	2 middle lower incisors.
II	8 to 10 months	4 upper incisors.
III	12 to 14 months	2 lateral lower incisors and 4 first molars.
IV	18 to 20 months	4 canines.
V	28 to 32 months	4 second molars.
		20

At Two Years. Our baby is finally two years old, with his thirty pounds of weight, his sixteen teeth, and his two and a half feet of proud height. His independence and confidence, his assertiveness and aggressiveness, his inquisitiveness and acquisitiveness, his buoyant energy and vivacity, are invaluable assets that may be used to great advantage in securing for him the highest type of development. What he can do at this time varies greatly with his associations, his surroundings, and his training. At two years of age he should be able to do many things in a constructive way with his own little hands. And things that a few years later he would consider tasks can now be made play for him, and in this way his developmental progress be made more rapid, with a more satisfactory foundation. As mother's and daddy's helper, he may learn poise and muscle control and powers of thought and judgment often considered impossible for a child of this age. With the physical as well as the mental, the possibilities of a child are never reached. And without question the child's ability to think and to do is far greater than is ordinarily supposed. We shall discuss this further in a later chapter.

The Third Year. The third year is a continuation of the second. Baby grows and changes fast during this third twelve-month period, and physically as well as mentally begins to take on more nearly the characteristics of the grown-up. His pulse, 140 at birth, 110 during the second year, is 100 during the third. His height increases about three inches during this same period. His weight increases about four pounds. His thorax, or chest, is now greater in diameter than his head, and becomes elliptical rather than round. His abdomen is smaller and more like that

of the adult. His spine takes on adult curves, flattens out, and begins to show up the typical spinal prominences so evident in the center line of the adult spine. His legs also assume more nearly the adult proportions. While in infancy the legs are only 43 per cent of the body length, at three years they are 50 per cent, as compared with the proportion at sixteen years, which is 60 per cent.

With the physical foundation well laid during the first three years, our baby leaves babyhood well prepared to meet the vicissitudes of child life. Let us hope that his constructive health program so well begun may continue on through childhood years.

Baby's Eating Habits During His Second and Third Years

Critical of Food. During baby's first year he took what he got with grateful heart and asked no questions, but it is during his second year that his eating habits really begin to be formed—habits that affect his entire after life. It is in this year that he first gets the opportunity to say anything about what and when he wishes to eat. It is at this time that he first gets to have any privilege of choice in the matter; and, this privilege once given him, he comes very quickly to be critical of this food and that, making up his mind that he does not want some particular thing or that he would like so much to have that most interesting bit of food some other member of the family seems to enjoy so immensely. And so the very first habit that is formed which distorts his eating *régime* is one of doubt and uncertainty as to just what food he will venture on any occasion, with, what finally is worse, a state of psychological negativeness as regards the entire question of eating, this often applying more especially to the foods that are very necessary for him to have.

There is no doubt in anyone's mind that the feeding part of baby's program during his first year is of utmost importance. No one would wittingly make a mistake in his food during the first twelve-month period; but, once safely past the year mark, the feeding problem revolves around another interrogation point: What does baby want? The question is not, What does he need? or, What is he going to get? And once let this young man or young lady get the idea that the momentous decision is his to make, he can keep a whole family guessing, and in the end get very little to eat of food that he actually needs.

In order to arrive at the best way to handle this important problem of the second year, it will be well for us first to consider just what baby should have in the way of a regular food supply, one that will insure the best possible state of growth and de-

velopment during this rapidly progressive period of his physical life.

Three Meals a Day. Somewhere between nine and thirteen months the well-nourished child should be put on three meals a day. No longer, as we have done during the first months of his life, do we plan for the baby a five- or six-meal schedule;

but, with the other members of this well-ordered family, we put him at this age on breakfast, dinner, and supper, with orange juice or some equivalent between his meals.

Fruit for Breakfast.

Breakfast will probably be about seven o'clock. And the important trio for this meal will be: fruit, cereal, milk. There is nothing better than our stand-by, the apple, for the fruit part of the meal. His fruit may be baked apple, apple sauce, or scraped apple. However, he may have any other fruit that can be finely divided and mashed or that he can thoroughly chew. Care should be taken that fruit



LAMBERT

Baby's diet should include protective foods which help prevent sickness.

is ripe but not overripe, and that stewed and canned fruits are not too sweet. There is advantage in having fresh raw fruit or fresh stewed fruit; but there is no fruit that baby cannot take at this age if it can be finely divided for him, either in its preparation or by his own teeth. We should remember that while banana is a good food, it takes more the part of a cereal than of a fruit, and will fit into his diet program best as an addition to his cereal rather than taking the place of his more juicy fruits. Banana given him should be well ripened. This fruit is often

well taken by babies as young as three or four months. Dried fruits, as prunes and dates, are all right for him, but they should not take the place of the fresher fruits. For example, our thirteen- or fourteen-month-old baby may have for the fruit part of his breakfast, say, two tablespoonfuls of apple sauce and two or three dates.

His Breakfast Cereal. Now as to the cereal part of his morning meal. He has been accustomed to cereal ever since he was five or six months old, and he continues as he has begun with a variety of cereals from day to day, and as much as he likes, his appetite being a fairly safe guide, just so his supply of milk is not cut short by too great a supply of cereal. If baby tends to be too fat or does not want his milk, then his amount of cereal should be cut down. Occasionally a coarse cereal may cause baby's stool to be too loose. If so, less cereal or a finer one should be used. Special care should be taken that all cereals are well cooked.

Milk for Breakfast. The milk part of his breakfast is very important, and, as the basis of his daily ration is still one quart a day, he must get as nearly as possible his third of a quart at each meal. Boiling a quart of milk for him will cut down the thirty-two ounces to about thirty. This will cut his breakfast ration to ten ounces. Some of this he will take on his cereal. The remainder he may drink from a cup or perhaps take from a bottle, though at this age he should be being weaned from his bottle even though he has been a bottle baby. If he eats a good supply of fruits and vegetables and his cereal is about the right proportion, and if he is gaining properly in weight, it will not be a serious matter if he lacks a few ounces of having his quart daily. Eight ounces at a meal may be quite sufficient.

For the Sake of His Teeth. There will always be an advantage in baby's taking part of his cereal in the form of dry bread or toast, because of the benefit to his gums and teeth of the necessary chewing. In fact, as baby comes to the place where he can eat a half or whole slice of whole-wheat toast at his breakfast, it may not be necessary for him to have more than a small amount of breakfast mush, this to be more for the purpose of variety and of acting as a vehicle for some of his milk. A small

amount of cooked cereal serves a good purpose in giving him a warm dish for breakfast, though if his milk is warm, as it usually is, this may not be so necessary after all.

At half-past nine or ten, our one-year-old or older should have three or four ounces of orange juice, or perhaps half an apple scraped. Tomato juice may be substituted for the orange juice.

Baby's Dinner. This meal will be sometime between twelve and one o'clock, depending on the time he wakes up from his nap. At this meal he will have as a trio, vegetables, some sort of cereal or starchy food, and milk. His vegetables should be tender and mashed or as a *purée*, depending on the toughness of their fiber. He may have any vegetable that can be finely divided. Spinach may be minced for him, carrots mashed, asparagus tips taken just as they are; string beans and peas should be made into a *purée*, unless very tender; cauliflower may be mashed for him. Turnips are all right, but should be given carefully as very often baby will not like their strong flavor, and we do not want to prejudice him. Cabbage should not be given until he has learned very well the art of chewing. But as he gets well on into the second year, say, by the age of eighteen months, and has learned to chew well, he may take practically any vegetable eaten by his elders, provided it is cooked simply, containing no fat, pepper, or vinegar, and is not overseasoned with salt.

Potato. Potato is a very good food for baby, especially if baked, and is one of the best forms in which he may take his noonday starch. However, substitutes for potato that may be used are rice, macaroni, extra bread or toast. *Potato or these equivalents should never crowd out his leafy and green vegetables.* Potato, being such an attractive food, is often chosen by the young man or young lady to the exclusion of more important vegetables. If there is a tendency to do this, it will be better to omit potato for a time, or perhaps allow it only two or three days in the week. In the place of potato, carrots or turnips may be given, or potato may be served in combination with other vegetables. A vegetable *purée* or soup may be made by cooking together various vegetables, then putting them through a sieve or colander and seasoning them with salt and milk. The following is a sample combination: potato with skins, onion, spinach,

celery with tops, cooked together until tender; press through a sieve, add enough evaporated milk to make it creamy, and salt to taste. The milk in this vegetable *purée* will help to bring the baby's milk ration to the required standard; and the cooking of the skins in the soup insures an extra supply of mineral salts and vitamins. Baby may have tomatoes as freely as he can be persuaded to take them; and this persuasion should begin early, as they are a valuable food. As soon as he learns to chew, he may be allowed such raw vegetables as grated carrots. He will greatly enjoy the privilege of chewing a stalk of celery, and he will chew it so thoroughly that a few strings of celery fiber hanging to the stalk, gripped so firmly by his little fist, will be the only evidence left of the crisp delicacy. Just as he has learned to chew the apple and the orange given to him in the hand, so can he eat the strip of raw carrot that he will enjoy quite as much as the stick of candy to which, unfortunately, he may be initiated later. Ability to chew well will soon eliminate the necessity of *purée*, and usually before the second year is over he will be able to eat practically any fruit or vegetable in natural form.

As already suggested, vegetables should be cooked plain, without fatty seasoning. A little salt may be added, and milk, if it is necessary to include more milk in baby's ration. If there is any question, baby should have the more tender portion of the vegetables. He will delight in corn on the cob, and tender ears may be given him. Splitting the row of kernels with a sharp knife will make it easy for baby's little teeth to bite out the tender part. Every child is a law unto himself, and mother must at times be the judge. However, there has been much needless fear as to any harm that might come to the two-year-old from the use of ordinary fruit and vegetable fiber. Milk he will need to drink in addition to that he may have with his other food.

In the middle of the afternoon he will again have his orange juice, tomato juice, or some simple fresh fruit like scraped apple. After eighteen months it will be well if his between-meal fruit be limited to juices only, and if from this on he has no solid food between meals.

Supper. Supper will be about five, and will be much the same as breakfast. It will include fruit raw or stewed cereal of

some kind, and his regular portion of milk. Instead of ordinary cooked cereal, he may have milk toast or bread and milk or cereal gruels of any kind. He may have well-cooked rice, preferably the brown kind. It should always be remembered that brown rice and the darker cereals are better than refined cereals, e. g., polished rice and white bread.

Eggs. There is little advantage in adding eggs to baby's diet during this period, but an occasional egg may have the advantage of making a variety, and some physicians advise it. If baby gets within two or three ounces of a quart of milk daily, his protein is adequate. Occasionally a baby who fails to get sufficient milk daily will take an egg a day very well, and will in this way get something that will make up for his milk shortage. Egg yolk is often advised even for very young children because of its iron and vitamin A content. Cottage cheese is valuable as a protein food.

Spoiling His Appetite. One very important thing in connection with the food question is that during the second and third years *baby does not begin to use butter, sugar, jams, and jellies*. Better the stewed and dried fruits for extra sweet, and more milk and cream if necessary for added fat, than to add to the child's ration at this age artificial extracts of these natural foods. Once let these artificial things be added to his bread, his crackers, his cereals, and our tiny tot has for all time lost his appetite for plain food—one of the commonest nutritional calamities of childhood. These extras are in no way essential to his proper development, and, in fact, because of their interference with proper diet balance, they only increase the difficulties of the feeding problem and thus decrease the child's chances for maintaining a proper state of nutrition. It is because of this mistake made during the early period that the child soon gets to the place where he no longer "wants" his cereal, his milk, his vegetables, and is happy only when he has some food that has been trimmed up by the addition of the more or less artificial accessories. Thus, unwittingly, parents lay the foundation for much anxiety in connection with the feeding problem in later years. There are some things that the child should be gradually encouraged to like. Cottage cheese and buttermilk are two of

these. It is usually not a difficult task to teach children to like cottage cheese, and if a little sweet cream is added to buttermilk and the child given a little now and then from a spoon, in many cases it will be possible to lead him to acquire an appetite for this valuable food. Honey as well as fruit, raw, stewed, or dried, may furnish the natural sweet that every child needs. Banana is a good, wholesome food that children usually like, and it may be added rather freely to baby's diet. Remember, however, that it is a starch, and must not crowd out the juicier, more acid fruits. Its place in any meal may mean less bread and potato rather than less apple, berries, or orange. Baby may have olives or avocado during this year, and may learn to chew nuts well enough to be allowed them in moderation.

During the third year the eating program should remain much the same as before—the same principles apply. There should be no slacking in regularity or type of meal. Baby will tend to eat a larger amount and greater variety. There will need to be no fear of anything harmful in any of the fruits and vegetables that the rest of the family eat, provided they are not over-seasoned. It is much better for baby if his vegetables continue to be cooked without fat, and his salads served without mayonnaise. Baby's taste not having been perverted, he will enjoy raw carrots, celery, and tomatoes without any trimmings; perhaps a little salt and lemon juice at times, and chopped nuts and olives with his salads for variety. Honey and lemon juice he may like on his lettuce, but there is great advantage in his learning to enjoy it plain. Such food as raw vegetables, hard bread, and nuts given daily will insure proper mastication, and help to encourage the development of hard, sound teeth. The dietetic part of baby's program, because of the fact that it furnishes the material out of which his body is built, is, of course, of the very greatest importance; and fortunate indeed is the baby and the young child whose parents give careful heed to the principles underlying nutrition.

Program and Care

In the Morning. Our baby in his second year is still the early riser, and he is the house announcer that it is time to wake up. One thing that he has learned in earlier months is patience. So if he wakes up fifteen or twenty minutes before the rest of the family are ready to respond, he happily pulls and pounds on the bed bars, talks to himself, and when at last some older face does appear, he laughs with good morning glee. When mother gets up she dresses him, puts him for a few moments on his nursery chair, and then, with a piece of raw apple, raw carrot, or raw celery, or a drink of orange juice, she turns him loose in his pen until breakfast time. He has his breakfast around seven, perhaps later. He may have this before the rest of the family have theirs, if that seems the best way in this particular family; or in his high chair beside mother or father or big sister, he may have his breakfast with the rest. Either way is all right. Just whichever is more convenient, provided that he gets the food he should have, and not things he should not have.

After breakfast he is again put on his nursery chair, then in his pen or his penned area or the fenced back porch, where, with his playthings, he is happy for another hour and a half. The nearer he gets to the age of two, the larger is his area of freedom until, with proper supervision, he has the run of the place. Sometime between nine and nine thirty, we will say, he has his bath. His short warm bath should always be followed by the snappy cold one that will leave his skin cool and glowing. Then his orange juice, two to four ounces, and he is off for a two- or three-hour nap. He will sleep like a top, and waken fresh, rosy, and hungry for his dinner, which may not be until one o'clock if he sleeps that late.

The Afternoon. He goes on his nursery chair both before and after his dinner, and then out with his playthings again. If his morning nap is over somewhere between eleven thirty and twelve thirty, he may be ready for another nap after

his three o'clock fruit lunch of orange juice or scraped apple. By four, or perhaps sooner, he is ready for the occasional caller or for a ride in his cart or a walk with mother or auntie, or perhaps for more play in his pen or to be free in the yard and the sand pile, supervised by big sister or brother home from school.

At Evening Time. By five o'clock he will be quite ready for his supper. After this he will, no doubt, have a good visit with daddy. Sometime between six and seven he must be made ready for bed. With his busy outdoor life he may be in need of another bath, or mother may find this evening hour the more convenient time in the day to give him his regular bath, letting this take the place of the morning dip. During the first part or even the entire part of the second year, while baby may still seem unable to go the night through without emptying the bladder, it will probably be well to take him up and change him or put him on his nursery chair before the big folks go to bed. If mother wishes or needs to retire early, this can be daddy's task. One busy daddy who saw little of his children during the day was wont to remark that this was the most delightful ten minutes of the twenty-four hours for him.

His Sun Bath. Sometime during this ideal day of baby's, he should have a sun bath if possible. In warm weather it may be the first thing in the morning, even before his breakfast. A little sun suit on, his playtime in his pen may easily be made his sun bath. If the mornings are cool, the hour before his morning nap may be better. Some days the most practical time will be the first thing after his dinner. There will be many times in some climates when a sun bath is impractical. It is at such times as this that cod-liver oil should be pressed into service.

Cold Water. Cold water is so good for baby that he must learn to love it, and when the weather is not too cold he will delight to play in the tub of cold water in the back yard for a few minutes after his sun bath. This may be in lieu of his morning bath. Mother can easily see to it that he gets a ducking or perhaps has the hose or sprinklers turned on him—not too strenuously, of course. Care should always be taken that the use of cold water is such as to enlist baby's delight and co-operation rather than his fear and antagonism. Never should

a cold bath be forced upon him when he is in an attitude of resistance to it.

But what boy or girl of one or two was there ever who did not surreptitiously find that tub of cold water conveniently near, and splash in it, especially when it was forbidden? What a shame not to turn baby's keenest of interests to such good account as may be this natural delight in cold water! The baby who can have a sun bath and a cold bath every morning, with necessary cleansing ablutions at bedtime, is the baby who will grow hardy and husky, with little susceptibility to disease. His warm bath taken in the evening should also be followed by the cool splash. Never under normal conditions should baby be taken from a bath with his skin soggy and warm. Always should it be cool, firm, and glowing.

Clothes. During the second year our baby will spend so much time out of doors that clothes should be largely the rough-and-tumble sort that will stand the strain. For play, rompers or sun suits made from gingham or some like material are best, and in warm weather he may need little else. Emancipation from diapers is such a boon to mother, and means so much of comfort to baby that it will pay to take the extra time and effort that it may require to educate him early to proper habits of bladder control. As soon as the diapers can be dispensed with, only the rompers with perhaps a pair of barefoot sandals may be all that the baby will need in the way of clothing during summer months, and he will revel in the comfort of his freedom. He may, during the warmer part of the day, wear less—perhaps a tiny bathing suit or one of the many varieties of sun suits, which will give him the advantage of more or less continuous air and sun baths. On such a program he will grow browner and hardier with every added day.

In cooler weather he will need more clothes. Extra clothing can be gradually added as the weather demands it—even to leggings, sweater, cap, and overshoes, if necessary to keep him warm. It is very important that the creeping baby have his feet and legs warmly clothed in cool weather. We must always remember that the toddler in all his roamings keeps pretty close to the floor, with its disadvantages of draftiness and changeable



HE WILL ENJOY HIS DAILY SUN BATH.

temperature. So while it is important that he do not have too much on in the way of clothes when it is hot, it is quite as essential that he be warmly clad when it is cold. Garments that should be provided for him in cool or cold weather are union suit or shirt with pantie-waist, and knit panties, stockings, shoes, stocking supporters, rompers or coveralls, dress or suit—whatever the time and occasion demand. In addition to this, there should be extra outer wraps of whatever kind, number, and weight necessary to keep him rosy and warm.

The Third Year. During the third year of baby's life, the same principles of program and care apply. Twelve to thirteen hours of the twenty-four should be spent in bed, and he should still have his regular daily nap. Plenty of sleep; daily baths with an abundance of cold water inside and out; outdoor life; simple clothing; plain, wholesome food, planned on the principles we have outlined, are the important requisites in the physical life of this most important member of the family. Add to this an atmosphere of love, happiness, and contentment, with the gentle but firm discipline necessary to train his developing powers of determination and self-will into habits of self-mastery and mental poise, and we have made sure for our little man or woman, as the case may be, the firm foundation necessary upon which to build well the manhood or womanhood of the future years.

Some Don'ts. Don't permit the incongruous combination of cap, mittens, sweater or coat, with bare knees. If it is cold enough for extra outer garments, it is cold enough to have the knees protected. And—

Don't put sweater, coat, or cap on baby just because these garments are cute when the weather is so warm that you are going without a coat, with, perhaps, the sheerest of dainty dresses. Give baby the advantage of the same comfort you enjoy on a warm day; and remember that with his rapid metabolism and active muscles, he needs even fewer clothes than his elders.

Don't fail to dress him more warmly if the color or feel of his skin, especially his nose and finger tips, indicates that he is cold.

Don't fail to see that baby has discarded his bottle at least by the age of fourteen months.

Don't ever permit him to go to sleep with a bottle in his mouth, whether of milk or orange juice. Let him know that when bedtime comes he is to go to bed, his wants having been previously supplied, and that he must go to sleep.

Don't ever permit him to suck his thumb. See chapter 40.

Don't fail to teach him, by the same methods if necessary, to keep his fingers out of his mouth.

Don't permit him, after he has been put to bed, to call you back for some insignificant want. When good night has been said, let him understand that that is all.

Don't talk "baby talk" to him, but talk in terms of the grown-up members of the family. Talk to him as if he understood, and he will understand much more than he is supposed to.

Don't talk to him incessantly, or let anybody else do so, just because he happens to be about and his answers are so cute.

Don't make a plaything of him.

Don't let baby feel that always he is the center of attraction. Let him realize that there are other interesting people besides himself to whom mother or daddy may wish to pay attention.

Don't show him off.

Don't repeat his sayings before him.

Don't ever let the baby eat anything except at the regularly planned times of eating.

Don't, at mealtime, ask the two-year-old, "What do you want to eat this morning?" but serve to him the food you have planned for him, and let there be no alternative. If it is a difficult food, serve in small portions, and give first as the only food to be had until it has been eaten.

Don't get careless about his nap time, but see that he gets it at a regular time every day.

Mothers, fathers, and friends, not the child, are the ones to whom we should say, "Don't."

SECTION IX

Baby's Health Foundation



ROBERTS

Plenty of good food in response to a good appetite helps to
build a sturdy baby.

Signs and Safeguards

A Well Baby. What are the signs that our baby is well, and what are the safeguards that keep him so? To be forewarned is to be forearmed, and an ounce of prevention is worth a pound of cure. And it is still true that a stitch in time saves nine.

Baby's Skin. No longer do we admire the white baby. Whiteness suggests pastiness and flabbiness and lack of proper tissue tone. One of the most important signs of health is a skin that is pink, leaning away from whiteness to brownness. Such a skin will be firm, elastic, and warm—not passively sodden from retained or acquired heat, but actively warm, due to a snappy circulation and muscle tone. This kind of skin is assured by sun baths plus cold baths on the basis of a proper feeding *régime*. We have failed in the past to take advantage as we might have done of the health-giving rays of the sun, but now we are learning that one of our most important safeguards lies in the intelligent use of these vitalizing rays.

Sun Baths. Baby, with eyes protected, may be put in the sun for a sun bath at the age of a month or six weeks. The first day the exposure will be perhaps but one minute to his back and one minute to his front. The next day it will be increased a minute more, until, gradually, day by day, his stay in the sun will be prolonged. By three or four months we may indeed have a "wee brown baby with sparkling eyes." If not by three months, certainly by six. Baby may be born in the time of year when sun baths are impractical. He may be born in the late fall or in the winter. In such case, in many climates, he may not be able to begin his sun baths until spring, when he will be from three to five months old. But just as soon as possible it is very important that he have them. And whenever begun, they should be given with the same care to prevent sunburn. As he becomes accustomed to sun baths, his resistance to cold will also be increased so that he may take his sun bath even on a cool or cold day if he is protected from the wind. Mother can tell as she rubs her hand over him and looks carefully at him whether his skin shows

the warm pink reaction that it should or whether he is being chilled. As he grows older, say, at the age of six months, he may have partial sun baths on quite cold days by putting on him a little warmer bathing suit. His lively arms and legs and active little body will keep him warm under such conditions even in a cold atmosphere. On such a program baby's ability to resist cold and infections will be greatly increased. Please don't leave your baby outdoors half dressed or undressed in cold weather, however, if his face and hands are cold, his nose is running, and the general appearance of his skin shows that he is not comfortably warm. And in warm weather don't leave baby in the sun when, by his hot skin, flushed, sweaty face, and evident discomfort, he shows overheating. Avoid this by giving the sun bath in the early morning when he can stay long enough to get the benefit of the light rays without so much of the heat. Intelligence plus good judgment must ever be used in order to get the best results.

Cod-Liver Oil. During the time of year when there is no practical way of giving sun baths, it is considered an important safeguard to give baby cod-liver oil. The cod-liver oil may be begun as early as six weeks or two months. This may be given ten drops twice daily, gradually increasing to a teaspoonful at a time, in a little orange juice; or any one of the various vitamin A and D concentrates on the market may be used. It will be well to do this as a routine during the rainy, foggy, and wintry seasons up to the time baby is two years old. Then later, according to indications.

Cold Baths. In planning baby's program throughout the previous chapters, suggestions have been made as to the importance of cold baths and how to give them. Properly given cold baths will often determine whether you have a hardy baby or a soft one. It is said that the Romans began to degenerate as a nation when they gave themselves over to the luxury of warm baths.

Warm water is a great blessing. It is of special value as a cleanser, and it certainly feels good. It is restful and comforting, and as such has a definite place in body ablution for both young and old, for the infant as well as for the aged. The coaxing of the blood into the skin by a previously given warm or even hot bath makes much easier, and sometimes more beneficial, the

cold bath that follows. Baby should never have a cold bath unless he has been thoroughly warmed first, either by a previous bath as warm as he can enjoy it, or by a sun bath, or by vigorous exercise, or perhaps by just the warmth of a summer day. The tiny baby can be trained to react well to the cool and cold bath by following the plan outlined in chapter 20. Once having become accustomed to it, he will enjoy it. If he does not, there is something wrong—the proper tact has not been used in planning and in giving it. The older baby will still get his warm bath, but will splash longer in the cold water; and when the time comes that he plays out in the back yard in the sun and takes long sun baths, he may often enjoy the cold bath without the preliminary warm one. So with the combination of sun bath and cold bath, our baby has the typical ruddy skin so indicative of beauty and health.

There are various skin eruptions to which children are subject. We will not attempt to discuss them here, but simply say that for any unusual skin irritation the physician should be consulted.

Constipation. Another important sign of health is regular bowel action. Sluggish bowel activity may be due in part to family type—baby is born constipated, they say, just as somebody else is born tired. But family type is no reason why baby has to stay a constipated baby. The right diet *régime* with regularity of program will overcome this tendency in any baby. As has been suggested in the chapter, "Bottles and Formulas," the condition of baby's bowels may be greatly influenced by the amount of sugar in his formula. And so a constipated baby may be helped sometimes by giving him a tiny bit of honey on the tip of a spoon after each nursing. An adjustment of mother's diet with more fruit and vegetables in her daily ration may help baby's constipation. See page 132.

Orange Juice. This may be relied upon in great measure to overcome a tendency to constipation. It can be given to any baby, from one month on, or even earlier, and if a nursing baby is constipated may be just the extra stimulus the bowel needs. It will be well to begin with about a teaspoonful, and this should not be diluted too much. One or two times as much water as

orange juice is usually quite sufficient dilution. If baby does not seem to like the orange juice, it can be begun in even as small an amount as a few drops, undiluted, given in a spoon. This can gradually be increased. As more is given, it may or may not be diluted. Babies bear straight orange juice much better than is ordinarily supposed. The three- and four-month-old baby may take as much as two or three ounces of orange juice daily if there is any indication for it, and from this time on as much more as is necessary to overcome any constipation that he may have on an otherwise correct feeding program. In the amounts usually given, orange juice need not be warmed. For the tiny or feeble baby it may be well to warm it at first, then gradually he may become accustomed to taking it at ordinary room temperature. There is no harm in warming it if baby seems to take it better that way.

Prune Juice. The time-honored prune juice may have its place, but should never entirely crowd out orange juice. After the age of four or five months, apple sauce or other fruit may be helpful in some cases. Sometimes a constipated baby is getting too much cereal and too little fruit. Just change the food balance by giving more fruit and less cereal, and very satisfactory results will often be obtained. During the second year the same treatment holds good—more of fruit with less of starchy foods and an ample supply of orange juice or some equivalent fruit or fruit juice.

Regularity of Habit. This is an important factor in overcoming constipation. The encouragement of a bowel movement at a regular time every day may be the one thing left necessary to do after everything else has been carried out in the proper way. Enemas should not be depended upon for any length of time. Laxatives should not be given. It is one of the greatest mistakes to give baby such things as milk of magnesia, Castoria, or anything else of a laxative nature. On such an artificial program, a foundation for many a case of constipation has been laid.

Diarrhea. Constipation is rarely a real cause of worry, because it can so easily be corrected. But diarrhea is. Loose stools are always sufficient reason for anxiety. Diarrhea means indigestion or other irritation in the digestive tract, and the doctor

should be consulted at once. In a bottle baby, the situation may need careful judgment in formula adjustment. Or the diarrhea may mean an infection; the same thing that causes a cold in the head or throat may produce a like condition in the digestive tract, the irritation being evidenced by looseness of stools. With a right feeding plan, baby almost never gets a diarrhea from indigestion. A cold or infection may, of course, come to any baby, but is less liable to affect the one on a proper health program. See pages 170, 175, 177, 251 for discussion as to the best plan to follow in diarrhea.

Normal Respiration. Freedom from colds, a free, clean, normally working breathing apparatus, with tonsils of the right size, are important signs of health and are among the essential conditions that must be assured the developing child. It is during the second year, when the child is given access to artificially refined foods and the unbalanced diet of the average adult, that he lays the foundation for his frequent colds, coughs, enlarged tonsils, and adenoids. Let baby remain on a correct feeding program throughout his second year, and on through the years, and the colds and respiratory abnormalities so common to childhood need rarely appear.

Food "Trimmings." The fact that a child is a year and a half or two years old is no reason why he should add to the butter fat in his milk extra butter on his bread, nor why he should add to the normal starch-sweet value of his potato, cereal, honey, and fruit the refined excess of sugar so ordinarily served to the family in the form of jellies and jams and sugar. No matter how carefully and conservatively these things may be added to the diet later, we would urge that at least up to the age of three, he not have his appetite perverted and spoiled by the use of the "trimmings" that nearly every one seems to think it necessary to have on every article of food. Fruits and vegetables in abundance, whole-grain cereals, and the daily quart of milk contain a perfect food quartet for our baby. When necessary or advisable, extra concentration and sweet may be added in the form of dates, raisins, prunes, ripe banana—yes, and in the form of the avocado in the regions where it is available. Olives as well may be added when baby has come to the age when he can chew in-

telligently. By the age of two, he may have a few nuts at meal-time.

Vaccination and Toxin Antitoxin. There are other important safeguards that science has taught us for the protection of the child from several very virulent foes. These are vaccination for smallpox, as well as immunization for whooping cough, diphtheria, and scarlet fever. The value of vaccination is too well known to make it necessary for us to discuss it here at any length. Suffice it to say that the baby should be vaccinated before he is a year old, and by the age of six months the only perfectly safe course as regards whooping cough, diphtheria, and perhaps scarlet fever, is to have the preventive treatment. These are all very simple and easy to give. Every one is familiar with the sore arm of vaccination, which lasts but a few days. But the others, usually injected hypodermically, cause no reaction. Take your baby to your doctor or to your health department or nearest baby welfare station and see that this important treatment is given. Only in this way can these dread diseases be wiped out. Let every baby have the necessary preventive care so easily given, and these diseases will no more afflict our children and take a toll of precious lives. And it must be remembered that in letting your child have such a disease, you not only run the risk as far as he is concerned, but, in the propagation and spreading of the germs that thrive and multiply as the result of his having it, you are laying other children liable, and are helping to maintain a scourge which, by your coöperation, might be wiped out.

Baby's Disposition. Another sign of a healthy baby is a good disposition. A normal baby is a happy baby. On the basis of proper food, fresh air, sunlight, and cold water, the important thing to insure a good disposition for baby is regularity of program. Nothing is more upsetting to baby's nerves than never to be sure of anything, never to know what is coming next. But on a regular schedule, with the right thing at the right time, baby's disposition will develop symmetrically with his body. Other signs of health are bright, clear eyes, clean tongue, sweet breath, and correct posture. These all follow in the natural order of things on the program that has been outlined in this and preceding chapters, and with right training insure the pleas-

ant, happy, helpful disposition so much to be desired for baby.

Regular Examination. It is of great importance that parents check up regularly as to baby's physical condition; and no matter how well he may seem to be, no safeguard is more important than the regular visit to the physician or welfare station, where baby may be compared with recognized standards, and authoritative information can be obtained as to his condition and progress.

What About Rickets?

What Is Rickets? A country schoolgirl taking the county eighth-grade examination answered the question, "What is rickets?" with the reply, "It is a nervous disease." No doubt she thought that nervous people were rather "rickety," and they are; but the rickets we are talking about in this chapter is quite a different proposition. Many people of to-day have as little idea of what rickets really is as this schoolgirl had. Some who are better informed will say that rickets is a disease of the bones; but even these are wrong. While it is true that rickets, running its full course, produces bone deformities such as bowlegs, bowed arms in the creeping baby, distorted pelvis, crooked ribs, square head, enlarged joints, and deficient teeth, yet these changes are but the manifestations of the disease and not the disease itself.

Rickets is a disease of nutrition. It involves improper and incomplete food intake, and imperfect assimilation and appropriation of the food by the tissues; and apart from actual bone deformity, there is a weakened systemic condition, a poor blood quality, and lessened resistance to disease. So in the preventive and curative treatment of rickets there are two things to be considered: first, right feeding, the giving of food that will supply necessary material for body building; and second, hygienic conditions that will increase the child's power to utilize the food so planned and given.

Lime Supply. Why is it that the bones in this disease are so subject to abnormal change? It is that for some reason there has been an inadequate supply or appropriation of calcium (commonly called "lime"). This has either not been given to the child in sufficient quantities in his daily food, or, because of some defect in his powers of digestion or assimilation, has not been properly passed on and taken up by the bones and teeth. Knowing these two simple facts, the logical treatment is very easily understood, and becomes very practical in its outworkings.



LA TOUR

Outdoor air, sunshine, and cold water are three natural preventives of rickets.

Treatment. Given a child with rickets, of course the treatment must be curative; but how much better to be forewarned and forearmed, and thus prevent the unfortunate condition of malnutrition back of the disease! If we are so fortunate as to be able to go back very early in the child's development, we shall begin with the prenatal care and see that the expectant mother has the correct diet—one that will supply her own body and that of her developing child with an abundance of lime salts and tissue-building foods.

Prenatal Food Supply. So our mother in preparing for her coming babe will eat much in the way of fruits, vegetables, and milk—the vital food trio with their content of the mineral and protein material so essential for the proper upbuilding of blood and tissues. Milk is not only rich in protein (or muscle and nerve food), but has also a high content of lime, upon which all growing animal life is so dependent for the growth of its bony

skeleton. Of these three foods the mother should have an abundance. Added to these will be necessary energy food in the form of whole-grain breads and cereal foods, potatoes (often baked), natural sweets (as dried fruits and honey), and fats (the larger portion preferably in the form of the combined natural fats of olives, nuts, and that which she receives in milk). Our program for her will not be too rigid, however. She should not be overburdened with a sense of restriction, and good judgment should be used in giving her sufficient variety so that her diet may not seem to her to be too monotonous. As she becomes intelligent in regard to just why she is eating and what she is accomplishing in giving her baby the very best possible start, her mental attitude in regard to this will be such that she will often enjoy most the eating program that is best for her. And if she gets an abundance of the so-called "protective foods,"—fruits, vegetables, and milk,—there will be much less danger of her making the mistake of eating too much in the way of pure "energy foods," which tend to clog the body when taken in abundance. As enough gasoline must be supplied to run a car, so must the mother have a sufficient quantity of energy food. If on a normal program, her appetite may be a fairly safe guide.

For the Nursing Baby. Then when baby arrives, mother's diet will continue to be the same, for her baby is still dependent upon her for his nutrition. And when the time comes that he is no longer dependent upon mother's milk, let us hope that she has become so accustomed to the natural, normal diet that she will continue on in the same way, that she may be at all times a stronger and better mother.

Baby's Food. The feeding of baby himself, which often comes first to be a real problem at the beginning of the second year, must be based upon the same principle—an abundance of the vital trio—fruit, vegetables, and milk—with energy foods depending upon his weight and appetite. The first three foods being assured, his appetite is usually a safe guide for the fourth. So, as we have outlined in chapter 31, baby's breakfast will be fruit, cereal food, and milk. His dinner will be vegetables in abundance, with cereal food or equivalent and milk. His supper will be fruit, cereal food, and milk. The important items for

any one of these three meals will be his fruit or vegetables, as the case may be, and his milk, as the case always is. The amount of cereal food and associated energy foods depends on the child's appetite. A large bulk in any meal should be one of the important pair, fruit or vegetable. Sufficient milk should be added to make at least eight ounces for the meal, and his cereal or starchy food—in the form of bread, toast, or cracker; mush, rice, or gruel; potato or banana, or perhaps macaroni, tapioca, or the like,—as much as the child needs to satisfy his appetite until the next meal.

Accessory Foods, or "Trimmings." As to "trimmings," or extras, not included in the quartet of foods, they help out the cereal (starchy or energy) group, and by reason of their concentration may be of value. They add calories without too much bulk. The amount of these needs to be adjusted with regard to the child's digestion. But of these "trimmings" there are two kinds. There are the natural, those which are easily utilized by the body because they still contain their vitamins and mineral salts; and the artificial, those which have been deprived of these and, which, because of their extreme concentration, are not so easily handled by the digestive tract or the body's powers of metabolism.

The natural "trimmings" and accessories are honey, dates, raisins, other uncooked dried fruits, nuts, olives, and cream. Of these the younger child may have honey, dates, and, a little later, raisins. As he becomes old enough and intelligent enough to chew well, other dried fruits and nuts may be given. Some children may not need any of these accessory foods. The child who tends to be overweight may well stick to the plain foods without even the honey; and sometimes we need to take away from these fat children some of the cream from their milk. It may even be necessary to reduce the amount of milk. Ordinarily a certain amount of extra sweets in the form of honey or dates may be added to any meal. Far better to add energy food in these simple, natural forms than in the forms that are usually given to children,—ordinary Graham crackers or other sweetened crackers; cane sugar (especially out of the sugar bowl, as daddy likes to give it); jams, jellies, marmalades; that bit of

candy that auntie brings; or the cooky that grandma urges "won't hurt him." Ice cream is a good food, but is just as well not introduced into his program until he is so thoroughly established in his fruit, vegetable, and milk *régime* that there is little danger of his losing his appetite for these important foods; and then care should be taken that its use is not overdone.

Don't Spoil His Appetite for Plain Food. Beware of adding anything to your child's food that will lessen his appetite for that which is plain and simple and wholesome. Remember that the butter and jam on his bread will make it harder for you to get him to eat plain bread and milk, and that his sweet cooky will greatly increase the problem of getting him to eat a sufficient amount of vegetables. When the child gets to be four or five years of age, and has had "physiology stories," explaining to him the needs of his bones and teeth, much may be accomplished in eliciting his intelligent coöperation—children are far more intelligent and coöperative beings than they are given credit for. Then it will be safer to initiate him into the delights of foods that must be used in moderation and with self-control, in spite of the fact that "the more you eat the more you want." From the standpoint of rickets, however, the great danger is over by the time the child reaches the age of two or three; well past this first period, there is little danger. But even though we no longer fear rickets, we shall not abandon our child to the eating of anything and everything that his own caprice or that of loving relatives may suggest or desire. We shall ever bear in mind that the right food program, persisted in, will prevent other diseases often quite as undesirable as rickets.

Increase His Resistance. Being assured of right feeding, we shall now consider for a few moments what can be done to increase baby's powers of assimilation and food utilization. We often find a child with inherently weak powers of food appropriation by the body, and something needs to be done to increase his ability to get the most out of the food that he does eat. And because every child should have every possible chance, there are certain things it is well to introduce into his program whether or not he shows any signs of rickets. Of course, these things that are so valuable as preventive measures are the very best means

of curing the disease if it has once got a start. It is the health program that is both the safeguard and the curative measure.

After Proper Diet. Outdoor air, sunshine, and cold water are the three natural preventive and remedial agencies for rickets; those are the things that increase oxidation processes and keep the blood speeding on its way.

The child that is properly fed can easily be trained in some way or another to take cold baths,—baths that will leave his skin cool and glowing instead of warm and dusky. See pages 141, 153, 222. Outdoor life can be planned even in the coldest weather and, well protected with necessary clothing, the child gets a wonderful health impetus from outdoor play in winter.

Sun Baths. Of special value in the treatment of rickets is the sun bath. See pages 152, 222, 229. And because of its value as a preventive measure and the part that it invariably plays in building up the child's resistance to other conditions even more common than rickets, we can but urge the regular sun bath as a routine part of the daily program—when there is sun to be had. This should be given in the nude or nearly so, beginning with from one, two, or three to four or five minutes' exposure, depending on the age of the child, and gradually increasing this until baby gets a ruddy, tanned skin. Great care should always be taken to avoid sunburn and to protect baby's eyes. A general sunburn, especially in a small child, would be a very serious matter; but with proper care the result will be the gradual tanning that is an index of increased vital resistance. Sun baths may be given to very young babies, and it is well to plan this for the baby by the time he is three months old or even earlier. See page 152. A baby so treated and properly fed is in very little danger of developing rickets. The routine visit for medical examination is important.

Cod-Liver Oil. Of course it is not always possible to give sun baths. There will be many gray winter days, and at such a time of year sun baths cannot be relied upon. As a preventive treatment during the months when sun baths are not practical, cod-liver oil should be given. In a sunny climate, with sun baths as a part of the daily program, cod-liver oil is probably not necessary unless there are signs of rickets. See pages 153, 230.

Malnutrition

A Definition. What is malnutrition? It is imperfect or incomplete body building. In feeding the child we are building his body, and whether or not that body is well and strongly built depends in great measure upon the building material, in the way of food, that we supply him. Proper and complete nutrition or body building is a matter, first, of correct food supply, and, second, of the ability on the part of the body properly to utilize the foods that are supplied. Given a normal child and a normal food supply, there is little danger that the appropriation will not be normal and the results all that could be desired. If the child eats the right food, then sleep, fresh air, sunshine, and cold water will insure proper assimilation and growth.

When the child has, because of lack of proper food and care, developed a condition of malnutrition, the problem becomes a greater one; but must be solved along the same lines. Malnutrition having once been developed, the child's powers of digestion are weakened, and the difficulty becomes one of simplifying his diet to those foods that, while adequate, are very easily digested and assimilated. And greater thought and care must be given to the use of those natural agencies that will gradually increase his powers of food appropriation. We have again much the same problem that we discussed in connection with rickets in our preceding lesson. In fact, almost all the chronic ailments of childhood are built upon the same basis--that of incorrect food supply and lessened ability of the body to use the food. Upon this same foundation must all curative measures be based.

Signs of Malnutrition. What are the signs of malnutrition? The well-known symptoms in older children are underweight, a posture of weakness that shows pouching abdomen, flat chest, prominent shoulder blades, lack of the normal ruddy color of childhood, dull and more or less apathetic appearance of the eyes, relaxation of the facial muscles with often a tendency to open mouth. Along with these symptoms often go digestive disturbances, constipation, coated tongue, bad breath, tendency



MALNOURISHED AND UNHAPPY

to colds, and enlarged tonsils. The child is often nervous, fretful, peevish, disinclined to play vigorously. He may be extremely restless and fidgety, perhaps a "naughty child"—driving his elders to distraction, finicky about his food. These conditions, in themselves symptoms of malnutrition, tend to increase the undernourished state, and thus the vicious circle is established.

Causes of Malnutrition. Malnutrition may follow any one of the common diseases of childhood, like measles, whooping cough, scarlet fever—anything that temporarily lowers the vitality and health of the child. A child who has developed enlarged tonsils or adenoids may become, and usually does become, more or less malnourished. Late hours, undue excitement, too much company, too much attention, moving picture shows, even too many good times of the right sort, may keep a child's nervous system so keyed up that it will interfere more or less with his appetite for the normal food he should have. These, of course, are things that have to do more with the older child, yet often some of them are begun by the time the child is two or three years old, and it is well for the baby's mother to be forewarned that she may be prepared to keep her child from developing this most unfortunate state as he grows beyond the months of baby-

hood. It is the right program in babyhood that insures proper habits, with their resultant state of good health in later years.

Malnutrition in earlier babyhood is almost invariably the result of mistakes in feeding. It usually occurs in bottle-fed babies. The formula for such a baby has not been adjusted to suit his digestive ability, and, because of symptoms of indigestion, he has been fed first one thing and then another, often less and less as far as real food is concerned, until his food supply has become greatly inadequate for his needs. The weakness resulting from incomplete feeding has decreased his power to take care of food, until he is able to take so little that he becomes simply a starved baby. Some of these babies give up the struggle and die; others eke out an existence, being the thin, pale, dyspeptic babies that we often see. The extreme case is the emaciated, marasmic baby with the old face, the plaintive cry, and the utter absence of the cooing glee of babyhood.

Treatment. The first important thing in the prevention of such conditions is that a mother nurse her baby if it is at all possible. Second, if the baby cannot be fed in the natural way, he should at once be put in the charge of some one who understands the artificial feeding of babies. When a baby has once had indigestion from improper feeding, the only thing to do is to "back-track" and start over again, feeding at first less than he needs, and then gradually working up to the full amount that is required for his proper gain. If this has to be done too many times, it can readily be seen that the baby may lose out, and get into a very bad condition before the food combination is at last found that he is able to take. So if a baby must be bottle fed or shows signs of not properly digesting his food, it is important that he be taken at once to some one who specializes in baby feeding. Even the skilled specialist cannot always win out if the condition has become too extreme.

In addition to right food, there are some things that can be done to prevent and correct malnutrition. Good general care and regularity of program are important. The baby who can live out of doors and have a sun bath daily has a great advantage over the one who must, because of climatic conditions, be in the house most of the time, and who has no opportunity for sun baths.

Just how to manage any particular case of malnutrition is outside the province of this discussion. The individual case must be under the expert care of the physician who understands. We can but stress the importance of the right program and care from early infancy, and endeavor to acquaint mothers with the importance of being well informed and intelligent as to the normal baby's needs. After safely passing the first year, baby will not suffer from malnutrition if fed according to the principles we have previously laid down:—if he gets an ample amount of the members of the "food quartet,"—cereals, milk, fruit, vegetables,—and gets his full quota of rest, fresh air, sunshine, and water.

It is well to remember that defective nourishment may be mild in degree. We must not wait for marked signs of malnutrition. If our baby fails to make his proper gain in weight, has not a normally ruddy color, if his muscles are not firm, if his digestion is not normal, and his resistance to passing colds and infections is not what it should be, we may be sure that his nutritional state is not quite up to par. It is the malnourished baby, even though apparently only slightly so, who has the least resistance and is hit the hardest by the common infections of childhood, with the worst complications and after effects. Let us remember, too, that the fat baby is often poorly nourished. Good color and firm muscles are much more to be desired than excessive fat. The fat, pale, pudgy baby, whose overweight is due to an excess of carbohydrate food, is not the one who is most resistant to disease or who is the healthiest baby in the end.

The program as outlined in our study of rickets in the preceding chapter will be found of equal value in the prevention and correction of malnutrition.

What Shall We Do When Baby Gets Sick?

The Possibility of an Ailing Baby. We are not expecting baby to get sick ; but just suppose he does ! Much of our treatment along medical lines these days is preventive rather than curative. However, we must be prepared for the unexpected, the unusual, the emergency. Baby may get anything at any age if people about him are careless and bring to him infections such as colds, whooping cough, measles, scarlet fever, or if he is cared for by an individual having any such disease. But up to the age of six months, the properly kept baby is usually quite free from infection of any kind. He is kept so clean and has so little to do with other children or with the public in general that germs do not get a chance at him. The one exception to this is the common cold. Unfortunately, mother is often more or less subject to colds ; and if baby's caretaker once gets a cold, baby is pretty sure to get it too. It is possible, however, with care, to protect baby in great measure from any cold that she may have. This ideal baby we are studying is not handled all the time. He is alone and in his crib except for necessary attention. When the time comes for this care, mother is very careful to wash her hands, to keep her handkerchief out of the way, not to breathe in his face, to put on a clean apron when she tends to him, and she takes particular pains to do as expeditiously as possible the things that she must do for him.

If Baby Has a Cold. If, however, baby does get a cold, there is not very much to be done about it. He is already on an ideal program. There is little less or more that we can do. We are to continue to keep him on this ideal program with special attention to his being kept warm and away from winds and drafts, a little vaseline around and in his nose, camphorated oil on his chest, and we have done about all that we can. Of course we call the doctor at the first evidence of a complication of any kind. The colds that baby gets before he is six months old usually

do not amount to a great deal. The older he gets, the more severe his colds may be when he does have them. The creeping baby who gets a cold we shall take special pains to keep up off the floor and where it is warm, perhaps in a pen made on the top of mother's bed. If the weather is warm, he may be out of doors as usual, but out of the wind and with an extra rug under his feet, taking care that he is not on damp ground. If baby coughs much with his cold, care should be taken that the air he breathes at night is not too cold. A little artificial heat in the room may be helpful, with perhaps extra moisture in the air from a steaming teakettle, or the like. Especially is this treatment indicated when baby has croup. A warm room with ventilation from adjoining rooms—called indirect ventilation—may be advisable.

If baby has a cold, it may be that a change in his bath *régime* will be helpful. He is put into his bath at the usual time and in the usual way, but special attention is paid to the hot water that is added carefully until the bath is hot enough to make his hips and legs pink. He is then put into bed, tucked up warm, and allowed to go to sleep. This bath may be given once or twice without any cooling-off process, but in a day or two, the height of baby's cold past, he is put back on his regular *régime* of alternating warm and cold baths. Even with a persistent cold, it is usually not wise to continue with just the hot bath. See pages 141, 153, 222, 230. If baby does not respond properly to this treatment, or if he seems to be getting worse, a doctor should be called.

May Be More Than a Cold. It should be remembered, as we have already studied, that practically all acute infections in babyhood begin with the symptoms of a cold. Measles, whooping cough, diphtheria, scarlet fever, chicken pox, influenza, pneumonia, all usually begin with initial respiratory symptoms. So there should be no temporizing. As soon as it is evident that baby has anything more than a slight cold in the head, medical advice should be sought.

The older the child gets, the more liable he is to have the ordinary diseases of childhood; and when it is known that there is an epidemic in the neighborhood or vicinity, great care should be taken that he is kept away from all possible carriers. At the first evidence that baby may have contracted one of these infec-

tions, he should be placed under the doctor's care and the disease properly reported.

Digestive Disturbances. Another type of sickness that baby may get is a digestive upset. This may come on with vomiting or diarrhea or both. It may be due to improper feeding, but if baby is fed right and either one of these two symptoms appears, it is a pretty sure sign that baby has come in contact with some infectious material passed on to him from another child or older person, and that what was perhaps an ordinary cold or a respiratory infection in the one, caused the symptoms of indigestion in baby.

Principles of Treatment. The onset of almost any disease that baby might have may be characterized by vomiting or bowel disturbance or both. The same thing that produces respiratory symptoms in one baby may cause digestive symptoms in another. The effect of the germs on his nervous system or perhaps directly on his digestive tract, may be such that he reacts in this way rather than with the ordinary symptoms of a cold in the head, chest, or throat. Again the thing to do is to give him the usual care, keeping him quiet and comfortable and warm, and *away from other people*. Especially in the case of diarrhea it is advisable to give a warm enema. See page 175. A flaxseed enema may be advantageous because of its soothing and healing effect. This is made by steeping a tablespoonful or less of whole flaxseed in a pint of water, straining, and using as an enema instead of plain water. Even with the older baby no attempt should be made to give him any food except fruit juice and his boiled milk, which had better be skimmed. His cereal and vegetables may well be omitted for a time, but his milk and fruit juice should be kept up if possible.

Inability to keep food in his stomach is a serious matter, and if such condition continues for more than twenty-four hours a doctor should be called, for baby cannot long hold up under a fasting *régime*. It should not be forgotten that digestive symptoms as well as those of the respiratory tract may be the forerunners of any of the infections common to children, such as measles, whooping cough, scarlet fever, etc. And there are other more or less serious conditions of which any of these things may

be symptoms. That is why medical advice should be sought if there is any question.

If Baby Has a Convulsion. Another way that any one of these diseases may be ushered in is by a convulsion rather than by signs of a cold or of indigestion. In the case of a convulsion, while some one is sending for the doctor, who should be notified immediately, baby's mother or caretaker or the nearest one at hand, whoever he may be, should put baby into a warm bath at once, or what might be more practical, should wring large Turkish towels or flannel cloths out of hot water and apply them quickly around baby's legs and lower trunk, protecting his skin first with a dry blanket, then covering all with a blanket in order that the heat may be retained. *But be careful, very careful, in doing this not to burn him.* Care should be taken that he is handled very gently, and is kept as quiet as possible. A carefully given enema may be the next step. But if baby is quiet in his warm treatment, great care should be taken that he is not disturbed, even for the enema, unless the doctor orders it when he arrives. Please note again what has been said on page 124 about the possible cause of convulsions in a tiny baby. And in case of a convulsion in any child, be sure that there is plenty of fresh air and that there is no escaping gas or improperly burning heater of any kind in the room.

Fever. A rise of temperature may be baby's first symptom of illness. Any of the conditions already mentioned may be associated with, or followed by, a rise of temperature. Baby is flushed, fretful, or, perhaps, a bit groggy, his pulse rate quickened. At birth baby's pulse rate is about 140. By six months it is 110 to 120. At one year, 95 to 105. At two years it is about 90 to 95. It is difficult to get baby's pulse at the wrist, but it may quite easily be taken at the temple. Just lay the tips of the fingers lightly over his temple, and the pulsations may be felt. One of the most constant symptoms at the onset of any illness is an increase in the pulse rate. This is more easily noted in the older baby.

If it is found that baby has a fever, the safe treatment is to limit his food to fruit juices and boiled milk, perhaps skipping a regular feeding with nothing but orange juice instead; in the



LEARNING INDEPENDENCE

older baby time can safely elapse with no food but fruit juice. An enema may be given if there is any looseness of stool or if baby seems constipated, and the warm bath as outlined on page 247. These things having been accomplished with as little disturbance to baby as possible, the important thing is quiet and warmth. If there is the least question about his condition, the doctor should be called.

Don't Keep Fussing With Baby. Let baby alone; and don't get another doctor if the first one doesn't order a lot of treatment and medicine. This may mean that you have an up-to-date physician. There is no question but that many a baby's chances for recovery from some sickness have been greatly lessened by the insistent fussiness of anxious relatives. Nature keeps up a much better fight if baby is kept quiet. There is seldom any good reason for giving medicine to the baby. He has in nearly every case a much better chance without it. Don't repeat a treatment unless the doctor orders it; and if there is any question about it, the safest thing will be to leave baby alone and in quiet in his little bed. *Don't*, however, forget to give him *plenty of water*. Fever always calls for water and more water, and any sickness that baby may have will not preclude the great advantage of free water drinking. Many a fussy sick baby has been thirsty, and no one has thought to give him a drink. Sick babies have died because of a lack of water. So in your extreme anxiety, do not forget this important essential.

Giving Baby an Enema. When an enema is to be given, it is better to give a saline enema—i. e., a pint of tepid water to which a teaspoonful of salt has been added, using such part of this pint as may be necessary—or a flaxseed enema. See page 175. Either of these enemas leaves the bowel in a much more normal condition than plain water. In diarrhea or any condition of bowel irritation the flaxseed enema is a very fine treatment, and may well be given a little warmer than tepid, say 98° to 100°. In case of fever, the tepid saline enema is usually best.

An enema is given to a tiny baby with a rubber bulb syringe or with a catheter and funnel, and only a few ounces should be used, say, a half cupful, and then perhaps repeated. The older baby can take some more, but care should be taken that only

gentle pressure is used. After the age of one year, or perhaps sooner, the ordinary enema outfit may be used, but with a small baby enema tip and with the same care as to amount of fluid and pressure used. The necessary apparatus can always be obtained at the drug store, but explanation should be made as to its purpose. (See Fig. 33.)

A Word of Caution. Don't, *don't ever* give a soapsuds enema, or Castoria, or castor oil. Castor-oil days for babies are past, and in almost every case a dose of castor oil is a mistake; at least, let your doctor take the responsibility, not yourself. A fruit-juice diet may be a good thing for a few feedings, but after twenty-four hours baby must have more food.

If your baby's resistance is well up because of his previous normal program and proper feeding, you have little need for anxiety if, perchance, he should get sick. He will usually go sailing through the ailments of childhood little the worse for the experience. However, there are exceptions. Call the doctor if you are uncertain. "But," somebody says, "suppose he swallows a tack or a safety pin?" The tack will probably come through all right, and there isn't much to do about it except to have an X ray taken if there is any uncertainty. The safety pin will probably follow the same safe course unless, unfortunately, it was open when swallowed. Even in such cases nature has been known to handle the situation. The X ray will tell the story and indicate the treatment.

SECTION X

Baby's Habits



Good habits should be formed early in baby's life.

What Are Habits?

The Force of Habit. We are what our habits make us. Physical and mental make-up, action, and personality each is a composite of habit. Just as one learns to play the piano automatically and unconsciously so far as details are concerned, so does every individual learn certain ways of daily living. Those things that one does over and over again with ease and without particular mental strain or thought are one's habits. Even the body itself in its organic workings adjusts itself to the habits of life and becomes accustomed to doing things in a certain way. The body's power of habit formation is so great that it can adjust itself gradually to great strain or to harmful things. For example, a delicate individual can become used to hard work (perhaps with advantage); the morphine addict may become accustomed to his eight or ten grains or more of morphine a day and feel very well under its influence (even though it takes great toll from his nervous system and physical powers).

We have habits of eating, of sleeping, of working, of reacting in certain ways to certain stimuli. We have habits of appetite, of digestion and assimilation. We have habits of self-control, habits of self-indulgence, habits of thinking, of reading, of speaking. We go through a daily routine because of habit.

The more a thing, whether good or bad, becomes a habit, the greater hold it has upon us and the easier it is for us to perform it. It is when we do the unhabitual that the thing becomes difficult. Let it become a habit, and it is easy. The first days of our driving an automobile are days of strain. We are tired as a result. Let the driving become a habit, and we no longer tire. Until we become accustomed to a thing, it takes conscious effort, and conscious effort is more of a strain upon the nervous system than that which is automatic and thus done reflexly or subconsciously. This power to form habit, if rightly used, is one of our greatest blessings. Without it life would be an intolerable burden.

The smoothness of life—its freedom from irritation, strain, and anxiety—depends in no small degree upon the character of the habits we have formed in early life. The one to whom self-control has become habitual—"second nature," we say—adjusts himself to life's frictions and difficulties much more easily than the one to whom self-indulgence and display of temper are much stronger habits. Our habits of physical life, of mental life, of moral and spiritual thought and action, make living easy or hard as the years go by.

Wrong Habits. Let an individual grow to maturity practicing wrong habits of eating throughout childhood and youth, and he suffers unhappy results in a twofold way. First, he is subject to physical shortcomings and ailments as a result of the lack of intelligent eating. Second, he at last comes to the place where, in order to overcome these deficiencies, he must go through a process of readjustment that is often very difficult and trying, and that would never have been necessary had he begun right in the first place. However, with persistence, new habits may be formed, and the right way become at last the easy way. Change from one style of garment to another may cause actual annoyance because, as we say, we feel queer. But in a few days we have forgotten all about it, have become used to it, and are quite comfortable again as far as that particular garment is concerned. A white child carried away by the Indians will learn the habits of its foster race and become as accustomed to them as if it had been a papoose in the beginning. So, after all, our ways of life are what we are "used to." Fortunate indeed is the one who has become "used to" the things that make for life and health and moral tone.

Baby Has No Habits. The big difference between the baby and the grown-up is that the baby is without habits of any kind. He has two instincts; one, that of getting his food; the other, that of crying when food is denied. But of habit, he is utterly devoid. There is no lack of muscular tone in the tiny babe. His muscles are active and vigorous, but there is no purpose or intent in their movement. We have, in the infant before us, raw material. The habits of purposeful action, of poise and control, are to be developed. The possibilities are there, but the train-

ing is ours to accomplish. As we look at the baby and realize the perfection of habit that is possible with right direction, and the effect that this would have upon the entire personality; as we think of the high degree of physical, mental, and moral functioning that might be attained on the right habit foundation, we are awed with a sense of the greatness of the task that has been assigned to us, and feel greatly our need of wisdom and all possible help in its undertaking.

The Beginning of Habits. From the time of baby's birth, his habits begin to be formed. The earlier right habits are established, the less trouble will the child be to his elders or to himself as the years go by. Our problems in child training come largely because of our failure to establish proper habits from the beginning. With wisdom on our part, it is just as easy for both us and the child to start with right habits as with wrong. If the thing that a child should do has become a habit with him, there is never any trouble about it. He knows no other way, and coincides happily with the plan that is best for him.

The thing that happens with unfailing regularity soon establishes a definite habit in the child's physical functions, in his developing mental processes, and in his powers of coöperation. The thing that the child sees continually happening about him is no uncertain factor in the establishment of habit, for a child is a great imitator. What others do it is his greatest delight to do. The things that are being done in his home he tries to do, and he often surprises us by doing them. He learns unconsciously to live up to certain home conventions. The things that are simply not done in his home he does not do. And thus the power of example becomes the greatest influence of all in habit formation.

The Child Reflects the Home. The child becomes the mirror of the home; and when he does something that embarrasses us greatly, we endeavor to save our faces by saying, "Why, wherever did the child get hold of that?" We may be sure that it did not originate from within, but from some outside impression for which the home or the home's powers of supervision have been in some way responsible. Our greatest mistake is no doubt made in thinking that we must wait until the child is past baby-

hood before we begin to insist upon certain habitual things. We forget that we have by far the best opportunity when the page is clean, for erasure is difficult and often leaves a daub and a lack of beauty that might easily have been avoided if the very earliest habits, those of infancy, had been right ones—those upon which the more complicated habits of later life might easily and well have been built. So let us remember the importance of the first weeks, the first months, the first years, in the effect upon the entire after life of the individual.

Some of the Good Habits

Habits to Be Cultivated. What are the things in the lives of our babies that should become habits, and how may they be established? Let us consider a few of them.

The Habit of Sleep. Being put to bed at regular times, according to prescribed program, and left alone, is the certain way to establish this most important habit. Why is it that some children fight sleep? They dislike their nap; they do not wish to go to bed; it takes coaxing, bribing, rocking, patting, crooning, to accomplish the much-to-be-desired result; and all this is a strain on the child's nervous system, and on mother's as well. It is because a wrong habit has been formed. But a good habit may be substituted at any time by decision as to a better plan, and a little persistence in carrying it out. The mother's responsibility lies in putting baby to bed at the proper time and, if an older baby, explaining to him kindly that he must be quiet and go to sleep, and then leaving him alone.

A sleeping bag with corners pinned or tied to the bed may be helpful, and, if, like one tiny lad that I knew, baby stands up with his mattress on his back, he may need even a spanking to impress upon his mind the importance of obedience. One such summary discipline was all that was necessary with the little one just mentioned. With firmness on mother's part, nature will take care of the rest. It may take a few days to establish the habit, but baby will succumb if mother persists; and the habit once formed may be maintained with no difficulty. Beginning right with the tiny infant eliminates the strain of future adjustment.

The Habit of Happiness. In order to be happy, our baby must be well. Physical health, with the baby as with every individual in the wide, wide world, is the foundation for happiness as well as for all else that is worth while. And given a baby with a normal physical background, health follows proper care as a matter of course. There can be no irregularity detrimental to baby's physical health that does not affect his developing nerv-

ous system, his emotional poise, and therefore his chances for serenity and happy mental growth. Next to those things that directly affect his physical development, the greatest thing of importance is the atmosphere of the home about him. What others do, baby will do. And if there are rasping tones, fretful-



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CULTIVATE THE HABIT OF
HAPPINESS.

ness, irritation, complaint, and expressions of unhappiness on the part of those about him, like habits will tend to become a part of baby's personality; while if about him there is a joyful, happy atmosphere, he will naturally assume the same. The same habits of self-control that have been so beautifully developed in his elders will tend to become his own.

The Habit of Confidence.

Never knowing what is going to happen next is not conducive to the habit of confidence and co-operation. Uncertainty breeds distrust. Things following in the same logical order day by day, while of first importance in establishing regular physical habits, are also a prime essential in the development of that confidence and trust in authority and in the established course of events that

mean so much in the child's developing personality. Baby cannot be quite happy when he never knows what mother is going to do or what her mood will be—irritable, fretful, impatient one minute, loving and demonstrative the next, until her erratic and unexplainable changes of expression and tone keep baby's nervous system in a state of continual unrest.

Words are such valuable things. Do not let them come to be to the child but idle sounds with little meaning. Beware of

the continual promise of retribution that never comes—the promise to spank that is never fulfilled. Talk less, perhaps. Say nothing that you do not mean, and make no promise that is not kept. Make no promises either of punishment or reward that are soon forgotten and never fulfilled. Thus with mother always the same, and always to be depended upon, a habit of confidence becomes more firmly grounded day by day; and with confidence, the habits of honesty and sincerity tend to be developed in the child.

The Habit of Self-Control. The desire to be and to do like the other members of the family is a very strong element in the development of baby's power of self-control. And so in a well-regulated family, the fact that baby is a "copy cat" is a great asset, and makes easy the development of proper habits. Even in the early weeks of life baby learns the futility of useless crying—of exhibitions of temper that get him nowhere. He early learns enough of life to find out that certain things do not pay—that mother's "No, no" is a barrier over which he cannot hope to ride, that there are certain household conventions that carry the day, and that the happiest and best way is always to coincide. See chapter 42.

The Habit of Obedience. This is learned little by little, and if there is never any break in the chain, the formation of this habit becomes comparatively easy. The tiny baby cannot help obeying. The first deviation is in mother herself when she fails to carry out baby's regular plan or when, because of her own emotional appeal, she yields to baby's tearful insistence and does according to her mood rather than to what is best. Teasing, as mother knows, whether the weeping of the infant or the importunate plea of the tot or older child, is one of the most difficult things to resist. But in this resistance lie the advantage and the foundation for the successful management of the more difficult problems when babyhood is over.

Habit of Courtesy. Here is well illustrated the great power of example. Never-failing courtesy to the baby and the child will have its certain reward in the development of that beautiful grace in the child himself. Always, "please," "thank you," "I beg your pardon," "I am sorry," the courteous "good morning," and

kindly greeting—all have their response in baby's imitation. It simply grows unconsciously, and we see our child coming to be like the picture that we ourselves have ever presented before him. We may say that baby's personality habits are largely a replica of the home. So the thing, first of all, is for fathers and mothers to have the true spirit of parenthood and be safe examples for their children to follow.

Habit of Order. This habit also is dependent for its earliest encouragement upon the established order of things in the home. The baby of two years or younger loves to hang his things on hooks convenient for his height—his coat on a hanger designed for him (perhaps an ordinary hanger cut down for him and painted his favorite color), to place his shoes side by side like daddy's, and to hang his clothes neatly over a chair at bedtime. He delights to help mother pick up bits of paper and dust the chairs. His ever-ready response to mother's suggestion, "Let us put away the things," is nearly always a positive and happy one. "Bobby is all through with the blocks, so now we will put them away,"—and Bobby happily coincides, that is, if this sort of thing is begun early enough, while he is still a baby and wrong habits have not already been formed. Baby has his own drawer for his things, or a box for his toys, a shelf for his books, low hooks and hangers for his clothes, and as he watches mother put away her things, he is filled with a desire to do the same with his. Kindly suggestion and coöperation on mother's part make the formation of the habit of order comparatively easy. Unfailing persistence in it and never-failing watchcare on mother's part are the secret of success.

The Habit of Proper Eating. How ever are we to develop in our children *the habit of eating* what is set before them? This is the cry that is going up from mothers all over the land. Baby accepts his food gladly up to the end of his first year. He takes with joy and satisfaction the food offered him so regularly at every meal, but sometime during his second year he begins to form a different habit, that of hesitancy, indecision, fickleness, and even antagonism as regards food. This is simply a change in habit; and, since in the beginning the advantage is all ours, there must have crept in somewhere errors in our management

of a situation that at first we had so well in hand. Perhaps just here a few don'ts will be helpful.

Power of Example. First and most important of all, *Don't forget the influence of home atmosphere and example.* If this is what it should be, there will rarely be problems. If baby sees the older members of the family fussing about their food, hears them continually remarking about their likes and dislikes, telling what they "just can't eat," there is no question but that baby will soon manifest the same critical attitude. But if all members, daddy included, eat cheerfully of the dishes served, with a social interest at the table that does not give the impression that what one is eating is the most important thing after all, baby will unconsciously eat his meal in the same way. And if the older members follow some definite plan as to the healthfulness of their eating, it will be easier to influence baby likewise; he will partake of the general atmosphere of the home.

Mother's Attitude. The mother who is able to maintain or to arouse a happy emotional attitude in her child toward a particular food that he should eat has the easiest and most effective way of solving almost all eating problems. Illustrative of this point, we quote from Mrs. Alice M. Deist, onetime Health Habit Instructor of Los Angeles Public Health Association. Says Mrs. Deist: "Sometimes one finds a toddler who has acquired a strong aversion to drinking his milk. The cause for this may be one of many. At some time the milk may have had an unpleasant taste, or it may have been too warm, or it may be that some adult has remarked in the child's presence, 'Oh, I just simply can't drink milk.' Such circumstances as these are very apt to cause decidedly unfavorable reactions to the drinking of milk.

"When such is the case, the mother is forced to find some means of bringing about a favorable reaction, and the question arises, How shall she do it? To force a child to drink his milk while tears drop from his eyes and perhaps into the glass, is a poor policy indeed, which not only brings about a greater aversion but disturbs the digestive organism as well. Also to let the child realize that one is seriously concerned about the matter may stimulate him to continue his antagonism in order to gain the extra attention he loves so well.

"Some mothers have found a better way. One tells of her child's fondness for dogs, 'wows' he calls them. Very cleverly she related this fondness to the milk-drinking situation. She pasted a cut-out picture of a 'wow' on the bottom of the drinking glass and, putting a very little milk into it at first, she told the child that if he would drink the milk he would see the 'wow.' The child's fondness for dogs and his desire to see the picture helped him to drink the milk; and with the continuance of this happy practice for a short time the aversion was overcome and the taste for milk cultivated. When this was accomplished, the parent made a happy transfer of the picture idea, and a picture book of 'wows' was started.

"Sometimes playing 'tea party' with milk for the tea, or drinking milk 'while kitty drinks hers,' or a new cup or a pretty glass into which the child may pour his own milk from his own little pitcher will bring about a new happiness that offsets the former antagonism.

"We who have the privilege of guiding and training children should ever remember that happy association with people or things brings about favorable reactions, while an unhappy association can bring about an aversion or dislike that may last throughout life."

Some Don'ts. However, there are other very practical don'ts.

Don't ask, "Does baby want this?" or "Does baby want that?"

Don't give a teaspoonful of one food, and then when baby pushes it away try a teaspoonful of something else.

Don't go from one thing to another in what seems to be a fruitless effort to find something that Baby Jack or Barbara Jean will eat. Give a little thought and care to the planning and preparation of baby's meal. Plan a day-by-day variety of fruits, vegetables, and cereals, so that you are reasonably sure there is no just cause for dissatisfaction. Then give him his food. If he refuses it, which he will rarely do if this plan has always been followed, show no undue concern. Never let him see you ruffled or anxious because he won't eat; simply let him go till the next meal if he so chooses. There will rarely be trouble next time. A little persistence will win out.

One Thing at a Time. It may be necessary as a temporary measure in the case of a difficult child two or three years old, to plan his diet program in a form that will give him, instead of the usual variety of two or three dishes at a meal, his essentials in one dish, and then let him take it or leave it. For example: instead of giving him cereal and adding milk, combine the cereal and milk in the form of a gruel—the cereal thinned with milk to the consistency of a rather thick soup. The one dish is placed before him at breakfast time; and let this be the only thing that is served him, unless, perhaps, a little toast to be eaten with it if he desires. Let there be no other food in sight. If he does not choose to eat, let him wait until the next meal, with a glass of orange juice between.

When the time comes for his dinner, serve him his vegetables in the form of a soup—the following recipe is good: potato, red onion, celery, tomato, and any other vegetable that may be desired or at hand. Clean thoroughly, and cut up without peeling or without removing the tops. Cover with cold water. Bring to a boil and cook slowly until tender, then press through a stout strainer with a potato masher. Thin if it is too thick. Salt moderately, and make creamy with evaporated milk. Serve with croutons—little toast “boats.” And baby will usually partake of it with relish. Let him have as much of this as he wishes, and some extra milk to drink if a good appetite should make him so disposed. But if again he refuses his meal, calmly wait for supper time, giving him his orange juice about halfway between. Supper will be a repetition of breakfast, or, perhaps, instead of the gruel, baby may have a slice of crisp, dark-bread toast covered with hot milk, or a cup or bowl of plain bread and milk.

This may seem severe discipline. However, some such plan as this is bound to bring results if persisted in for a few days, and may be necessary for the difficult child who has been started wrong. And on this simple plan baby has the food elements that are essential for his needs. As he adjusts himself to the new order of things, a greater variety may be given him. The important thing to make this plan a success is for mother to be very nonchalant about it—not appearing to care whether baby eats or not. And baby must be served his meal in a quiet place away

from all the members of the family, with no promises or coaxing or suggestion of other food.

Don't Overseason His Foods. Don't add butter, jam, jelly, sugar, or mayonnaise. Continue through the second and third years the simple plan of feeding already outlined in chapter 31, and baby's appetite will not become so cloyed that he will reject important food. As we have said before, the addition of concentrated dressings and seasonings is perhaps the greatest factor of all in producing the fickle appetite that is such a source of anxiety to the mother who wishes her child to be properly fed.

The Habit of Cold Water. This is an important habit, and, as we have suggested before, can be instituted very early. The child to whom cold baths have become second nature has little to fear from colds and respiratory infections. But this must be made a habit—not a thing suddenly insisted upon for the child who is not accustomed to it. If bathing as described on page 141 is begun in the early months, the child will grow into it with little thought or effort. The child who has not in the past had this opportunity must be gradually and happily trained to the habit of cold bathing. We suggest three ways of making the cold-bath time a happy and successful one:

First, see that the child is thoroughly warm at the moment the cold bath is about to be taken. A child already chilly should never be given a cold bath. He should be warm because of exercise, warmth of weather or room, or an initial warm or hot bath. An initial warm bath may well be made as warm as baby will take it—perhaps until his little hips get pink. He should not stay long in the hot bath, but should be thoroughly warm when transferred quickly from the hot to the cold. This initial bath will prepare him for the cold and will prevent fear, until, the cold bath having become a thing of delight, he will not always need the beginning warm bath.

Second, the first cold bath may be modified to tepid or cool, this temperature being gradually decreased from day to day. This is a good way to do in warm weather, and makes easy the cold bath without the preceding warm one.

Third, a delightful anticipation of the event may be encouraged by mother's attitude, by boats and floating ducks, and,

perhaps, by surroundings of unusual interest, as for example, the washtub in the back yard, or the spray of the sprinkler or the garden hose. With a little planning, almost any child can be taught to enjoy the cold bath, and thus develop a habit that will be a great protective measure against the ever-present infective agent that so often means colds and sickness for the little folks.

The Habit of Cleanliness. The little baby, of course, is always kept clean. He loves his bath. He learns to love his clean clothes, his clean bed, his clean toys. Cleanliness is such a happy habit. He loves his clean handkerchief, and likes to use it as mother does. He loves to brush his teeth—it is no trouble to get the two-year-old to brush his teeth; the trouble is to keep him from doing it all the time. So much easier is it to establish the habit early. Habits of bladder and bowel control may be taught much earlier than is often supposed. It takes a little more time at first, but it is well repaid in satisfactory results. When baby is on a regular normal program, his bowels tend to move at about the same time every day. Mother makes note of this, and anticipates the time by holding him over his “pottie” as early even as six weeks. He soon comes to know what is desired of him. To establish the habit, it may be well, for two or three times, to insert a vaselined Ivory soap suppository or a small enema tip. It is well to remember that the bowels are most prone to move shortly after feeding time.

By six months, or even before, it is well to begin training for bladder control. At this time the nursery chair can be brought into use, the same as for the bowel movement, and a little persistence in putting baby on the nursery chair at certain times, for example, just before and after nap time or bedtime, will often lead to very happy results in the early teaching of a most helpful cleanly habit. If the child is slow to learn these habits of control, it should be no cause for undue anxiety. Some very normal children learn much later than others.

Drinking From a Cup. The teaching of this habit should be begun long before the time when we expect baby to be weaned or taken from the bottle. It is a mistake to wait until it must be made an important issue. By the age of four or five months

baby should be given the opportunity of sipping from a cup. The first efforts may see little in the way of results but as time goes on and baby sees brother and sister, mother and father drink, he will learn to take part of his liquid food or his water in this way; and when the time comes that he is to say good-bye to the bottle, the transition will have been so gradual that no discipline will be required to accomplish it. In the formation of happy habits, the ideal is for baby to grow into them gradually. In this way there are no times of discipline, no anxiety, no nerve-racking experiences. Instead of strain and stress, there will be normal, happy growth into the ways that are right and that make for health.

Some of the Bad Habits

Why Formed? "Yes, that's what my children have—bad habits, and plenty of them!" The best of children are far from perfect, but have we been wise and alert when the opportunity was ours, and it was vantage time? Perhaps we were "too busy." But it would have been economy of time and effort and nerve strength for us and the entire family could we have known and have taken a little initiative in making sure the formation of the good habits rather than the bad. Bad habits in babyhood, in childhood, so often mean defective character building and unhappy shortcomings in after years. In the lack of a right foundation we have made too great a sacrifice to our convenience. We cannot afford to neglect early opportunity.

In our discussion of good habits, the alternate bad habit has been suggested. A few, however, deserve special mention.

The Habit of Always Sucking Something. Beginning first with the tiny infant, there is a habit for which the mother is always to blame, and that is the habit of *tippling*. Having learned that baby cannot be fed at any and all hours, and that water is not only harmless but valuable in the baby's daily program, she endeavors to satisfy all his demands between feedings by giving him water; and so baby comes to lie always with the nipple of a nursing bottle in his mouth—sometimes sucking water, sometimes air, sometimes merely an aimless sucking motion of his little mouth on the soft rubber. And the baby gets the habit of sucking, always sucking. And then next in order, as he gets a little older, this early habit of continuous sucking calls for the pacifier, which is stuck into his mouth and over which he may idle his time. So far life holds little for him but this endless, aimless movement of the muscles given him for the important purpose of getting food—a prostitution of a normal instinct which, in occupying his time, prevents to an extent the development of mental alertness and investigative power. We have made some progress. The "sugar tit" of old days is no more. Even that, however, gave baby something for his effort,

and possibly was not quite so conducive to idiocy as that of sucking with no other object in view.

One might ask, "Why not just give baby the empty bottle?" True, we have seen babies sucking an empty bottle long after it has given up its milk content. Most mothers, however, have come to feel that baby should not suck air. Whether baby really sucks air or not, I do not know, but there is a general feeling against the empty bottle or the nipple as it is. But we have all seen the baby who, in lieu of a regular "store" pacifier, has been given a nipple stuffed with cotton to make it a perfectly safe(?) procedure.

Tongue Sucking. Worst of all, as a result of this dependence for relaxation upon sucking, we find the baby who, in the absence of anything else, resorts to "sucking his tongue." Mother, you have some task before you now! Let us hope you will be given wisdom to overcome that for which you may not have been without some responsibility. Everything about baby and his program should be made as normal as possible. Then with diversions, happy interests, and attractive playthings, we may help him gradually to forget the habit.

Never to Bed Without a Bottle. Right in line with this dependence for peace and relaxation upon something to suck comes baby's habit of always having to have a bottle when he goes to sleep. We may laugh at the pacifier and the stuffed nipple, and yet, how commonly the mother of a bottle baby feels that her child is absolutely dependent upon having his bottle in order to go to sleep! How often we see children of a year and a half and two years of age who will not go to sleep for a nap or at the evening bedtime without the solace of a bottle of milk! And if it should be taken away or any effort made to induce sleep without it—what severe disciplinary strain would be imposed!

No, the better plan, and that which will not be an insult to baby's developing nervous system, is for baby to learn first of all that sucking is for a definite purpose. Let it never occur to him that there ever could be any other reason. May there not be a connection between this and the lesson we will want him to learn in later life, that physical powers were not given to be

used in mere amusement or selfish gratification? Next, that the taking of food does not necessarily have any direct relation to going to sleep. If he should happen to fall asleep while taking his bottle, there is no harm done. But he should often enough have his bottle given to him in arms, followed by a shift to his bed if it is sleeping time, so that he will not expect a bottle to be put into his mouth every time he is put to bed for a nap or for his all-night rest. Going to bed is an entity of itself, and is followed by quiet, rest, and sleep. Eating is a distinct and separate process, which may or may not come directly before sleep. And, anyway, he knows that when mother puts him to bed there is nothing to do about it but to acquiesce and let the sandman have his way. And should the sandman be slow about appearing, he contentedly accepts quiet wakefulness as his lot.

Putting Baby to Sleep. And then right in this same connection is the idea baby has that he cannot go to sleep by himself. Mother must lie down beside him; she must coax him, pat him, sing to him; she must get up and rock him. Resisting as long as he can, he finally falls asleep in spite of himself, and with a sigh of relief mother finds herself with a little time to get something done. Thus the courting of baby's nap becomes the greatest task of the day. There is no reason why baby should not go to sleep by himself. The whole trouble probably lies in the fact that when tiny he was taken up and fussed with at every suggestion of his that he was not in a sleepy mood.

Should we turn about and change from the old coaxing plan to the new one of regular unperturbed routine, we may find that it takes not a little moral courage to hold out against baby's active opposition. But the only thing to do is to put him to bed, perhaps in a sleeping bag if it isn't too warm, and in a quiet room. Leave him alone, and if he insists on getting up and "will not stay in bed," we may be forced to resort to the unhappy ultimatum of chastisement; so severe is the penalty for our indiscretion of earlier months. A little disciplinary persistence, and baby will resign himself to the inevitable; and a bad habit will be replaced by a good one. How much better, though, to have led him naturally into right habits that will become a part of his mature thinking in later life.

The Cracker Solace. Then following on after the sucking habit, and possibly as a result of it, is the cracker habit. If baby is taken anywhere,—to church, for instance,—where he is supposed to be still for a few minutes, crackers are taken along. This is done with the idea of keeping him quiet. And the poor mother, whose only relief from her baby's pullings and frettings is in the quiet that results from the cracker indulgence, can hardly be blamed for doing the only thing that she knows will lessen the nervous strain. The entire program of such a baby is wrong, and the only thing to do is to begin at the bottom and, by regular schedule and proper training, turn the tables so that mother will be leader and teacher instead of slave, and baby a happy and contented pupil.

The Slapping Habit. If baby doesn't get what he wants, if his will is crossed, he slaps, hits, or throws. This often begins when baby is about a year old, and is usually dealt with in one of two or three different ways. Since the slap doesn't hurt anybody, the response from older folks may be just a laugh because it looks so cute. After it has happened several times and has come to be somewhat of an annoyance, mother says, "No, no." As the habit grows, the "No, no's" are said more energetically, and baby comes rather to enjoy the issue. Some day when baby happens to hurt mother by a slap directly in her face, she, with a great deal of irritation in her voice, repeats her usual remonstrance, this time emphasizing it with a shake that arouses baby's temper and elicits yells of bitter resentment. How much better, simpler, and easier for both mother and baby for his hands to have been smartly slapped each time he indulged in such emotional display! One such reaction on mother's part may be sufficient, but two or three at the most are enough to arouse baby's power of inhibition and self-control, as far as that particular thing is concerned.

One little chap of two years that I knew was in the habit of hitting with whatever he might happen to have in his hand any individual who chanced to displease him. Toy rake, pliers, toy engine, tin pan, and the like were among the weapons he used in such a formidable way. I should like very much for the opponents of corporal punishment to suggest a better way of dealing

with this young man than that of administering at once a good spanking, and this hard enough to hurt, and repeating without lapse on every such occasion until the habit is broken. While with right training much corporal punishment can be avoided, yet there are times, as in this case, when the jolt of such chastisement is the only thing that will eliminate from a child's personality the tendency to a habit that is vicious in its effect, and from which the child must be delivered immediately for his own sake as well as for the sake of those about him.

Temper. Then there are the temper spells to which many children are subject, and they are manifested in different ways. We are all quite familiar with them,—yelling, screaming, holding the breath, pounding the head, kicking. There are just two ways of dealing with such outbursts. You may take your choice, dependent upon the exigencies of the occasion and your judgment in the matter. If Baby Jack is acting up in any such way, get out of the room as quickly as possible and leave him to himself. No child cares to play to an empty house. The show will soon be over. There are times, however, when this will not be practical. You may be in a hurry, other things may be waiting, and it may be necessary for Baby Jack to coöperate, and that immediately. And if Baby Jack has gotten into this habit, you may feel impressed with the need of getting him out of it as quickly as possible. Again a good spanking is a wonderful help. And the few spankings that you may need to administer now will mean that you soon will be able to join the anticorporal-punishment class. One little boy of twenty months chose to express his displeasure by screaming and spitting. The retribution that swiftly followed the few times he attempted it was very effective in its result, and though the little fellow was known afterwards to venture the threat, "I'll scream, spit, and holler," it was noted that he never actually did. Unless the situation seems to demand immediate chastisement, however, the absolute ignoring of emotional outbursts to the extent of leaving the child entirely to himself is a very wise plan to follow. He will soon learn that such actions get him nowhere, and bring him only loneliness.

Sulking and Pouting. Some children are very prone to develop the habit of sulking and pouting. Absolute ignoring of the

situation is probably the best way to deal with it. Immediate removal of the child from the company of others to the quiet of his pen or his room may be wise. In no case should he be coaxed or humored at such a time, nor should he be allowed to feel that he is creating a sensation or causing anxiety by his moodiness. The child who has learned to respect mother's word will respond to quiet suggestion from mother much more easily than the one who has not learned obedience.

Dirt and Fuzz Eating. Dirt eating is purely a habit, like the habit of sucking or putting things into the mouth, and must be dealt with in much the same way. The right physical program and correct feeding must of course be assured; then careful watchfulness, the diverting of the child's attention, the use of the power of suggestion, and the keeping of the child in a pen or grassy plot away from the opportunity. The child of two or three may find the prison house of his pen an undesirable penalty for yielding to his impulse to eat dirt, and in most cases such a plan will suffice. Chastisement in the way of slapping hands will bring results, but should be done thoroughly, never erratically. If such a treatment is begun, it must be persisted in, without deviation, until the victory is won. With such a plan in operation, he must be kept in his pen away from all dirt that he might be tempted to put into his mouth, except at such times as mother can be constantly supervising him. If your child eats the fuzz from his blankets, inclose his blankets in muslin slips or protect thoroughly with sheets.

Fingers in Mouth. And then what are we going to do to break children of always putting their fingers or toys into the mouth? The only way to do is in some way to develop baby's subconscious inhibition as regards this tendency. If this inhibition can be developed during the first year and a half, baby will never know how it happened that he has no urge to put his fingers into his mouth. And so just as with thumb sucking, the best plan is to prevent the early formation of the habit, at the first indication of the tendency, by snapping his little fingers until his inhibition as regards this thing works automatically. When mother begins a disciplinary measure of this sort, she must see to it that she is with baby constantly enough during

his waking hours so that she is cognizant of every time he puts his fingers into his mouth. Success lies in the unremitting regularity of the effect that follows the cause.

Substitute a Good Habit. As Mrs. Deist says, the best way to correct a bad habit is to substitute a good one; and her plan in working with this problem in the Los Angeles County Health Center is to say to the child who is putting his finger or his toy into his mouth, "Oh, you didn't mean to do that, did you? Now you will have to go and wash it, for we want to keep everything nice and clean, don't we?" And away they go to wash finger or toy, as the case may be. A few repetitions of this, and a good habit has been encouraged in the place of a bad one.

Masturbation. On the regular normal program there is little chance for this habit to develop at this early age. It is the neglected baby with local irritations and wrong psychological training who becomes emotionally conscious in this way. There need be practically no fear if baby has had the right physical and mental training from his birth. In case, however, any tendency toward such a habit has developed, the advice of a physician should be sought and the child carefully examined.

Remedial measures would be: Very close supervision of baby, with nothing about him to make him feel that he is being watched—just happy companionship; diverting his attention from himself with pleasant surroundings and playthings; taking care that his clothing is comfortable and scrupulously clean; carrying out the health and disciplinary program that will assure the best possible development of his nervous system. Above all, take special care that baby notes nothing of overanxiety or alarm in mother's attitude in regard to the situation. Never should the older baby be made to have a sense of guilt in regard to it, for the most important safeguards are those that have to do with his mental and emotional make-up. Beware of making such an impression upon his mind by anything you do or say that he never will forget; for the most important thing as regards the matter is for baby to forget it. Never should punishment of any kind be given. The treatment is almost entirely psychological, and should be very impersonal and casual as far as baby's observation is concerned. Read carefully chapter 46.

Is He a Thumb Sucker?

Why Not? "I never saw a thumb-sucking baby that wasn't a good baby," says grandma, "and I don't see any reason why he shouldn't suck it." Yes, of course, thumb-sucking babies are good babies; if goodness means simply keeping still and living an inane, expressionless existence most of their waking hours—goodness that comes from the preoccupation of mere physical sensation, goodness that comes, not from mental development and interest in surroundings, from developing self-control and normal processes of inhibition, but from lack of interest in anything but his physical self and senseless pastime. What does a thumb-sucking baby care about the things going on about him? The fascination of endless sucking entralls him, stifling all investigative impulse and outside interest. Hinder his mental development? Of course it does; how can it help it, and that just to the extent that it is permitted and indulged?

Rather Mental Development. Once a baby has gotten to the place where nothing but endless amusement will keep him quiet, there is lessened chance of his attention being held by the big world around him. And that is just the mistake that we elders have always made. We have thought that baby must have some senseless, idiotic thing going on at the end of his nose or under his chin in order to keep him contented. So we have made faces and noises at him, jounced and patted him, chucked his dimples and chin, tickled his ribs, pulled his toes,—entertained he has had to be by every clownish procedure that ancestral wisdom could devise. What chance has a baby for mental development on such a program—does anybody know? At such a rate, if baby ever does know anything, it certainly won't be our fault!

Must Be Amused. And so, having started such a program, the only thing baby can do to while away the long hours when older folks have not time to amuse him, is to amuse himself. And what more satisfactory way (for the older folks, I mean) is there than the quiet method of sucking away at his darling

little thumb in brainless passivity? If you don't think this is so, just note the child of four or five sucking his thumb, or, as you occasionally see, the one of eleven or twelve. The process doesn't seem to bring out any mental activity, does it? It looks cute at four months; but it doesn't look exactly the same at four years.

Physical Results. So much for loss of time that might be spent in developing mental processes. How about physical results? Perhaps the wear and tear on Johnny's or Mary's thumb isn't particularly to be worried about, though we do occasionally see a thumb quite wasted and spindlelike from such continual maltreatment. But when it comes to actual deformity of face and mouth, this is something that we parents do not particularly enjoy seeing as John and Mary grow older. Just suck your thumb yourself for a few minutes, and notice where the pressure comes; then you can understand how teeth may be pushed upward and outward, and the arch of the palate heightened. Just notice the tug from the sides, the strain on the jaws, and see how the whole contour of the lips, mouth, and face may be changed by the continual strain and pull. You may say, "My child sucked her thumb, with no such results as that." This is no doubt true. Moderate thumb sucking may do little harm; but how can you be sure that your child will be one of the moderate thumb suckers? And in this regard as well as in others, total abstinence will be much easier to insist upon than mere moderation.

Associated Tricks. As another evidence of the brainlessness of this habit, just notice the associated tricks; one child must have his blanket in a peculiar clutch during the thumb-sucking process, another twists at his hair, another pulls the lobe of his ear in synchronous rhythm, still another will insist upon maintaining a tight grasp on a piece of cotton or some soft object while he sucks.

An Early Lesson in Self-Control. Sucking, in babies, is a perfectly normal, legitimate, and necessary process; but if continued just for its own sake after the object for which it was instituted has been attained, it becomes a useless indulgence; and the sucking of the thumb, fingers, or pacifier, or even a continuous water tipping, becomes the prostitution of a normal

physiological process, which is wrong in principle, and when tolerated by the parents is a serious error in the child's fundamental education. Few realize the importance of the early lessons in self-control that should be taught the child during the first months of his life. When a child is first born, its active accelerator processes are vigorous, but its governing, controlling, inhibitory impulses have yet to be developed; as in automobile driving, the starting is easier for the novice than the stopping, but the stopping is far more important. The little lessons in self-control that are taught the child when he finds that crying for attention is useless and he finally decides to stop and to resign himself to what cannot be helped, and the development of the inhibitory impulse that keeps him from putting his thumb into his mouth because he knows that if he does there will come a sudden snap that will hurt, are invaluable, and are the beginning of bigger lessons in self-discipline that must come as life proceeds.

Nip It in the Bud. "What, snap a tiny baby's fingers? How heartless!" you say. Not nearly so heartless as to let him go on forming a habit that will only lead to much greater unhappiness on his part in future years. What does the momentary sting, even though it does cause the pitifully curled-out lip and the cry, mean compared with the wretchedness of nagging, argument, threatening, and punishment that often come when, at the age of three or four, a desperate effort is made to break the habit? How can it compare with the continual annoyance, to the baby as well as to his elders, of mittens, adhesive strips, elbow splints, aluminum thumb protectors?—all so often futile in the end. (The aluminum protectors or elbow splints have their place and are of value with the baby or child who has the habit firmly established or who is secretive about it.) Good judgment can tell us that the easiest way for baby is to have the habit nipped in the bud, then there is no more fuss and no more trouble, and much more happiness for baby in the long run. It is our own feelings that we are trying to save, more than the baby's, when we do otherwise.

A Preventive Measure. So what shall we do? Just follow the wise plan for the first three months of baby's life, of keeping

him in a large, roomy, sleeveless dress. There should be a while every day when he can have the opportunity to study those hands of his, but even after he is well past the age of three months the sleeveless dress or sleeping bag at sleepy time is a most valuable safeguard. This is only one of the several advantages of this most satisfactory type of sleeping garment, the wearing of which may be continued on through the first two years or even longer.

Disciplinary Treatment. If after the age of three or four months baby shows a tendency to form the habit of sucking his fingers or thumb, a sharp little snap whenever he puts them into his mouth will, if begun before the habit is too firmly established, develop a little inhibitory impulse that will ever stand him in good stead, and that will, after a few repetitions, keep that little thumb away from his mouth. Accompany the snap with the words "No, no." Thus "No, no" will receive due emphasis, and will be considered with more respect in other connections and on other occasions. Mothers are so prone to waste their words—and especially these "No, no's"—till finally they come to seem to baby mere sounds to which he need pay little attention. The right management of baby's case from a disciplinary standpoint during the first months and year or two of his life, may help us to get to the place a little later in his experience where we can say with assurance that corporal punishment is not necessary.

One important thing to remember in connection with breaking any such habit as thumb sucking is that an occasional reprimand does no good. Once having begun the disciplinary task, there must not be a single lapse, else there is nothing to do but to begin all over again. It will probably mean that for the few days it may take to accomplish the desired end mother will need to be very vigilant. If mother cannot find the time to watch so closely, or when the habit of thumb sucking is firmly formed, there may often need to be preventive devices used during that part of the time when she cannot be on guard. At such times baby's hands must be fixed so he cannot suck his thumb. The sleeping bag will in many cases accomplish this. Adhesive strips may be put on the little thumb in such a way as to make them most unattractive for sucking, and, as has been

suggested, devices such as aluminum mittens and elbow splints may need to be used to help out the situation. But there should be times when, with his hands free, baby can be taught to use his inhibitory power. The fact should not be overlooked that baby sucks his thumb because he has nothing else to do, so proper diversion with rattle and toy should ever be at hand.

Idleness is no better for baby than for grown-ups, and positive interests play an important part, not only in his education but also in safeguarding him against habits that hinder rather than help in his progress.

Then, with watchfulness and persistent reminder, baby will not only be cured of a harmful habit but will also be helped in the development of his power of self-control. While we cannot reason with him at this age, we can lead him to use his own powers of reasoning and discretion, and thus help him to learn wisdom and develop valuable strength of character. See chapter 42.

SECTION XI

Principles of Training



Baby's positive, creative urge manifests itself early in life.

LAMBERT

Baby's Nervous System

The Power Supply. The nervous system is that part of the body that regulates all else. It is the power supply. It is the starter and the stopper. It is the throttle and the brake. Every muscle, every organ, every tissue, has its nerve supply over which come vital currents that control all the body activity. There are the conscious, or voluntary, nerve centers; the subconscious, or reflex; the automatic, or involuntary. The conscious, or voluntary, are controlled directly by the mind; the subconscious, or reflex, are controlled by subcenters, both in the mind and in the spinal cord; the automatic, or involuntary, by what is called the sympathetic nervous system.

Nerve Subcenters. So far as is possible, the conscious centers are relieved of detail so that they may be left free to attend to those matters that require thought. So the subconscious and reflex centers take care of much of the routine muscle work; as, for example, walking, piano playing, etc. Under unusual conditions, even these might require the attention of the conscious centers, as in learning to walk again after a long illness. Almost all our ordinary muscular movements come, from babyhood on, to be governed more and more by what we call reflex action. We may give conscious thought to the technique of taking a step, but ordinarily we do not. So the subconscious and reflex may be transferred by the will to conscious control.

But the action of the heart, the lungs, and the stomach, we could not control by conscious thought, even should we so desire. These are controlled by a secondary nervous system called the sympathetic nervous system. The sympathetic nervous system is entirely outside of any direct control from the main centers, and it is well that this is so.

So we may think of three kinds of actions—that which is accomplished only by conscious thought; that which is under the general supervision of the conscious mind, but the details of which are usually looked after by subconscious reflex centers;

and that which controls those functions of the body that are entirely outside the pale of conscious regulation.

Emotional State. The sympathetic nervous system, while working quite independently, still gets its power current from the main centers; and while the mind has to do directly only with those things about which we give thought, yet, because of these connecting power currents, it is true that mental states do affect the sympathetic nervous system, and through it all body processes. Emotions, of whatever kind, do have their effect upon these power currents, and thus through them may influence the activity of digestive tract, circulatory system, respiratory mechanism, or any other body function.

It is very true that life functions themselves are stimulated by happiness and joy, by faith and confidence; that they are depressed by sorrow and despondency, by distrust and fear. Contentment and hope are potent as a means of health. Worry, anxiety, and distress are just as definitely factors in the production of disease. "A merry heart doeth good like a medicine: but a broken spirit drieth the bones." Proverbs 17:22.

A Great Controlling Power. It is very evident that the proper development of baby's nervous system, that which is to be the great controlling power in all his physical and mental growth, is of the greatest possible importance. The nerve tissues are just as definitely physical as any other tissue, and so all the measures that have to do with body upbuilding have a fundamental bearing upon the development of those tissues that have to do with nerve control. So first there must be the normal physical program. Upon this there must be developed proper habits of life, as we have discussed in previous chapters. Habits of thought have a direct bearing upon the equilibrium of the nervous system; for the highest nerve center, that of the brain, which is the seat over all, originates emotions and impulses that affect for better or for worse every part of the nervous mechanism—the sympathetic as well as the reflex and the conscious. Therefore, from babyhood on, it is important that habits of self-control, calmness, happiness, and joy be established because of their direct effect upon the conscious centers and through the conscious centers upon every nerve fiber and nerve current.

Some Can Stand Greater Strain. As we have studied in earlier chapters, it is true that some children are born with a great store of inherent vitality and nerve force. With these children, it requires more of nerve strain and irregularity to offset inherent equilibrium and to prevent the proper development of the same. Other children are born with less; they have a poor start to begin with. It may take little to upset what little nerve balance and strength they have, and thus they are easily made neurotic and nervous; but on the ideal program it might be possible for them to make up the deficiency, and in the end be quite as fine and stable as if they had been born with a stronger heritage of nervous energy and poise. So again we are reminded that an individual—his personality and physical make-up—is the sum total of hereditary and environmental factors. The hereditary has passed beyond our control; the environmental is still ours to influence.

A Delicate Structure. Just as baby is delicate in his physical structure, so is he in the make-up of his nervous system; and just as we handle his body with care, so do we handle his nerves in the same way. This is one reason why quiet is so essential for the baby, and why lifting him, moving him, handling him in excess, should be avoided; why mother should be calm and quiet in her treatment of him; why he should be saved from those noises, like the telephone, that make him jump, that startle him; why he should not be jounced and tickled and made to laugh at the whim of every admiring relative. And this is why, when he grows older, he should not be allowed to exhaust himself with temper tantrums or emotional states; why he should not be continually shown off and made the center of attraction; why he should not be made the plaything of the family; and why he should early be taught the important lesson of self-control.

Some Characteristics of Nervous Mechanism. Speaking of self-control, we must consider a little further some of the characteristics of the wonderful nervous mechanism. All through the nervous system, from conscious center to sympathetic nerves, there are the go and the stop signals. It is always easier to go than to stop—always easier to start than to finish. The impor-

tant thing with the infant is that he be born with a sufficient amount of the go quality. The use of the brake he is to learn for himself as the needs arise. With the positive current he is to a great extent born. The negative he must acquire. And it is this that his parents will need to help him accomplish. It is in this regard that we most often fail.

When to Teach. The time for teaching this is very, very early. We can, no doubt, accomplish the most during the first year. When the child is older, we should avoid the "don'ts" as far as possible. But the first two years of baby's life is the "No, no" period, when baby learns first not to do the things that he wants to do. We can do much less during this period in the way of positive instruction than later; our greatest accomplishment for him now must be in teaching him how to use the brake, how to check his impulse upon the sound of the two syllables, "No, no." If we fail to do this for him, we have failed in our most important duty and thus allow him to go through life with a handicap that only the harder and more tragic discipline of life's experiences will remove. So when baby wants to get up, he learns to lie down; when he wants to touch something, he learns to let it alone; the desire to throw, to yield to emotional impulse, he learns to control. Thus there is imparted to his nervous system a normal poise and balance and equilibrium that not only affect in a positive and beneficial way his conscious will, but through the vital connection that there ever is between the conscious and the sympathetic centers, he receives as well a very great benefit in greater strength and stability of sympathetic nerve supply with resulting increased strength of organic functions and physical build. Thus by the character building that it is possible for us as parents to establish for him during the early months of his life, we may not only affect his moral and spiritual attainments in later years, but also the strength of his nervous system and through it that of his entire physique and general health.

Different Types. There are different types of babies, just as there are of grown-ups. Different babies will have leanings in different directions, and will naturally have different dispositions; but the principles of training are the same for all, and problems of discipline are solved with greater ease the earlier

the proper training is begun. Some babies have stronger positive impulses than others. Some very easily learn the lessons of self-control. There are very few problems in the first two years, but they very easily increase in number and perplexity after that time.

Discipline. The question may well be asked, "What is discipline?" We are too often prone to think of it as that which breaks the will of the child and submerges his individuality into that of another. This is a very wrong conception of the principle involved or the true meaning of the word. Discipline is that relation of parent to child which leads the child to an understanding of that which is best and right and helps him to develop a nervous and emotional control that will make it possible for him to follow most easily in the way that leads to health and happiness.

The "Don'ts" and the "Do's"

Don'ts Come First. We hear a great deal about the futility and actual harm of continually saying "Don't" to the older child. Mothers have long since come to realize the uselessness of this method of disciplinary treatment, though they continue more or less hopelessly to use it. The trouble is, we are away out of time with our don'ts. If we had said them early enough, the occasion for their use would have very largely disappeared by the time the child left babyhood, and the do's might then have held their comparatively uninterrupted and successful sway. The don'ts are important early, but sink gradually into relative insignificance the farther away the child gets from the day of his birth. When we consider it carefully, it is quite plain to be seen that the child's training must begin largely with the don'ts, and that it is the successful learning of these that makes more easy and effective the do's of later months.

It is interesting to note that the Decalogue is made up almost entirely of don'ts, and it is of interest as well to consider that the great accomplishments or do's of the Christian dispensation have been built on the strong foundation of those ten great inhibitory commands. No individual who has failed to develop the inhibitory control involved in obedience to the "shalt not's" of the moral law can be expected to achieve much in the way of positive Christianity.

Inhibition. The power of inhibition is the great fundamental thing that makes man superior to the rest of the animal kingdom; and it is the development of this in his character that must first be accomplished in his progress from infancy, an animal state, to the manhood or womanhood designed first in God's own image. The ability to inhibit is ever the sign of poise, the mark of character.

A firm grip upon the emotions and impulses is a thing most to be desired by every human being whether old or young, and its ideal development is no doubt the most difficult quality of char-

acter to attain. The later in life such training begins, the more difficult becomes the task of accomplishment. And it is because parents do not realize the opportunity and possibility of babyhood in this very regard that there are so many individuals to whom self-control and a well-poised nervous system are things unknown.

Fixed Regulations. The first thing that baby learns as a foundation for this important training is the inflexibility of certain daily routine and the utter worthlessness of any attempt on his part to change that routine. He soon recognizes the comforting power upon which he is entirely dependent and with whose will his own must coincide. There may be a stormy time with the baby who has not been started right, in the effort to adjust him to the schedule that is best. And there may be a few prolonged crying spells that will tax the mother's nervous system to the limit. But being sure that she has done everything to make baby comfortable, and that he is not suffering, she is doing the greatest kindness in teaching him that his protests are of no avail. This lesson having been learned, and baby, enjoying a regular normal program, finally comes to the stage in his training when he must learn what it means *not* to do something that at times he may be very much inclined to do. This period need not come as an issue until he is well into the second half of the first year, except, perhaps, with that first indiscretion, thumb sucking, which we have already discussed at length in chapter 40; and even this issue, with a little care, can be postponed, if not entirely avoided.

Thumb Sucking. The mother who protects her baby from this habit rather than allows him to form it, with the necessity for discipline later, is very wise, and will save herself and baby much trouble. The sleeveless dress, which confines the hands at sleepy time, is usually sufficient safeguard through the early months. But with many babies there will come a time when a tendency is shown to form this habit and when it may be necessary to develop in the baby an inhibitory impulse in this regard. While this is not a study on thumb sucking, it serves as a very good illustration of the way in which the power of inhibition may be developed.

It may be possible, of course, by watching carefully and continually removing the thumb from his mouth with a firm "No, no" each time, so to educate baby that he will abandon the effort. But in very many cases this will not be sufficient, possibly because mother cannot be always present, and therefore it is too mild and uncertain a deterrent. It may be necessary to impress the restriction more emphatically on baby's consciousness. This can be done in a very few lessons. If, in spite of verbal reproof, baby persists, a snap on his little thumb will cause him to pull it out very promptly. This disciplinary measure once instituted must be repeated without fail in connection with every offense, with the precaution of having his hands carefully protected when mother is not watching or when he is put away for his sleeping time.

It will be but a very short time—perhaps twenty-four or forty-eight hours—until baby will succumb to the inevitable and give up the effort and forget it. The habit has been nipped in the bud. If, however, baby has formed the habit and has long indulged, it will take longer to break him of it. But even so, I know of no better method. It may be necessary to use aluminum thumb protectors or other deterrents¹ in an obstinate case, but there is great advantage in a method that will develop baby's own inhibitory powers and make him desist from doing the thing that he very much wants to do, even though his thumb or fingers, as the case may be, are perfectly free and unprotected before him and he could suck them if he wished. The knowledge of certain discomfort following indulgence makes him choose discretion, and this exercises his power of self-control, which exercise is of infinite value to him in his character development and the growing poise of his nervous system. Anything that can be done to cause baby to exercise his own power of control—to put his own check upon impulse, to apply his own brakes—is of infinitely more value to him than simply the placing of obstacles that would be impossible for him to remove even though he most surely would if he could. Who hasn't seen the child who has gleefully got the better of mother by pulling off

¹ Antifinger suckers in the form of thumb protectors or elbow stays can now be bought in any infants' department.

the adhesive strips or by getting the thumb out of its prison, until the thing has come to be a contest of wits between mother and babe—and babe usually wins out! For mother's keenness and alertness can rarely match baby's. He has nothing else to do but get the better of her if he can, so he can concentrate on the effort, and invariably wins. But if his own inhibitory impulse be exercised, he becomes then a dignified individual, and dependable, doing right because he has learned that it brings its own reward. In accomplishing this for him, even through what may seem drastic measures, mother has placed a very important foundation stone in his character building.

Throwing. A little later baby will begin to throw things. As he sits in his high chair, he will at times throw everything that is given to him—spoon, rattle, or toy. How foolish to give it back, just for him to throw again and again! It makes an interesting sound, and he enjoys the expression of protest on mother's face, and altogether it makes quite a delightful pastime. As mother protests, she says, "No, no, baby mustn't throw it; baby can't have it if he throws it down." But all these words are merely pretty sounds, for she keeps picking it up for him. How much better for her to say quietly, "No, Johnny, don't throw it down; if you do you will lose it and won't have it any more." Then as baby, regardless of her warning, throws it anyway, she may remark, "Too bad, it is gone." And that is all there is to it. Baby soon learns that he has a very wise mother, that what she says comes true, and that keeping things is not compatible with throwing them away. He soon learns to reason from cause to effect, and will check his impulse to throw things that he wishes to have.

Chewing Carriage Strap. Another baby will chew his carriage strap, and in spite of every remonstrance on mother's part, will continue to do so until she may remark, as did one mother, "I have done everything I possibly could to break my child of that habit, but she will persist in chewing that strap. I have just had to give it up. She has such a strong character." Character nothing! She simply has never learned to check senseless impulse, and so has formed a habit that takes drastic measures to break.

Pulling Down Papers. A little later when baby gets to where he can crawl about, he finds himself in inviting proximity to books and papers. And oh, what fun it is to pull them down! But it is very easy to teach him these first few days that such books and paper are not to be touched. "No, no," says mother. Baby, no doubt, has already learned that mother's "No, no," has a significance that it pays him to observe. But a venture-some disregard on his part brings the reminder that the "No, no" must be obeyed or unhappiness results. He prefers the comfort of coöperation, and books and papers remain undisturbed. If mother has been careless with her words before, it may be necessary to repeat the unpleasant little lesson; for carelessness of the past always increases the difficulty of the present. But persisting this time will make the next easier, and very few times will the same lesson need to be repeated, once mother's "No, no" has been accorded its proper significance in baby's mind.

Educate. Some one may say, "Wouldn't it be better to put the books and papers up high where baby cannot reach them?" It may seem easier, but it is not better, for baby is an intelligent little being, and his powers of self-control and coöperation need to be developed, and this is an important opportunity. Much better is the educational plan than to consider baby a helpless little animal unable to be taught self-government. And how much better to mold character while baby's disposition is still yielding and pliable. And what character trait is of more fundamental importance or means more in later life than this power to inhibit impulse? Too much temptation of course should not be left in his way.

Meddling. Then there is the child who is always playing with the silverware, tipping over the glass of water with his fussing, meddling with anything and everything, never having any idea of repose or of sitting still, a helpless victim to his unstable emotional control. And the "don'ts" with which he is constantly assailed pass over his head like a habitually disregarded alarm of a clock. He simply does not hear them or much else that mother says. This same child is often a bed wetter and a "nervous" child. What a blessing it would have been if when a baby he could have been taught the first lessons of inhibition and self-

control, which first learned consciously would later have had a stabilizing effect on his subconscious mind and sympathetic nervous system! Even now it will mean much if such a child can be taken in hand by a wise parent or teacher who will substitute healthful activity for his restlessness and in some way help him to develop a sense of self-mastery. This will not only tend to overcome his annoying personality defects, but will also influence in a favorable way the functioning of his sympathetic nervous system and through this his entire physical activity and make-up.

Nerve Imbalance. Lack of such inhibition often goes hand in hand with a sympathetic nerve imbalance that interferes with normal stability of all organic function, thus laying the foundation for many of the vague, indefinite ailments that are so commonly the affliction of the nervous individual. Few realize that the most important preventive treatment for these unhappy mental and physical states might have had its beginnings in the days of babyhood.

Restriction First. However, there is another angle from which the question of the "don'ts" should be studied in its disciplinary bearings. Again we would stress the thought that the successful teaching of obedience must begin with "No, no" and "Don't." The first commands must needs be those of restriction. This is so because, as we have just shown, baby's earliest need psychologically is to develop his ability to check impulse, this being one of the first essentials in stabilizing his nervous system; because baby can understand a negative command earlier than a positive one. He can understand and obey a command to let the ball alone at an age when it might be impossible for him to know quite what was wanted if he were told to pick it up. And because it is only in a restrictive command that the parent has the advantage, he should never issue a mandate that he might not be able to enforce. This last thought it may be well for us to consider a little further. Physical chastisement is a thing not idly or impatiently used, and in a well-regulated plan of training is rarely necessary—the few times that it may have had to be used having sufficed to impress the necessary lesson for all time. But it has its place, and is wise in situations suggested by our previous discussion. The important point to re-

member in this connection is that chastisement is safe and sure as a measure to teach baby to stop doing something, but is most uncertain and never safe as a measure to make him do something.

When It Is Wise to Be Cautious. Baby's fingers may need to be slapped to teach him to let books alone, and the parent may know that he can enforce this restriction; but let the parent take it upon himself or herself to make a child pick up his blocks, or eat his vegetable, or close the door, by any method of punishment, however severe, and he can never be sure of winning out. He may in the effort "lose face" himself, do great harm to the child's nervous system, and still fail completely as far as enforcing his command is concerned. The wise father or mother will be very cautious about creating any such issue. If such a situation arises, we may safely say that it is practically always due to an error in judgment on the parent's part.

A Psychological Situation. In the first place, as has already been suggested, the child may not understand the situation. Because of emotional excitement he may get a distorted idea of what is asked of him. In the second place, he may, because of this emotionalism, fail not only to understand just what is wanted but also how to carry it out. He may actually lose for the moment the initiative ability necessary to do as he is told. Under such conditions, it may be almost psychologically impossible for the child to comply—his emotional reaction overwhelming any power he might have of reason or judgment in the matter. Even under normal conditions, children vary in their power of response, and while obedience has to be expected, yet it is not in every little child's nervous system to respond like a little automaton to the parent's abrupt command, just as the electric current to the pressure of a button. Time must be given for him to digest the import of the command (if command it must be), and then time for him to summon his powers of initiation. So it may normally take a minute or two for the child to be able to obey. In that minute the parent's stern repetition may frighten away entirely such power. Try telling your child, only once, firmly and quietly to do something. Then leave the room or turn your attention to something else, as if you had no

other thought than that he would obey. He almost invariably will. While if you repeat the command excitedly six or eight times in that minute, he fails utterly, and your case is lost before fairly begun.

Let Your Child Keep His Self-Respect. And third, he may understand perfectly, but he may be a very strong-willed child with a childish sense of dignity that would make it impossible for him to acquiesce without losing his self-respect—yes, just as you or I might feel if our wills clashed with that of some one else who in an imperious way commanded us to do something. It might, indeed, be the very worst thing that could happen to that child's morale should his will be "broken" under such circumstances.

In getting a child to do something, it must be managed in such a way that when the struggle is over and the thing is accomplished, he will feel that he is the victor, not the vanquished. The lesson left should be one of self-mastery. Wherever possible, give him an alternative—do as he is told or forfeit a privilege. There is a great advantage in leaving to him the power of choice. If he prefers a spanking to obedience, let him have it. But there may be a great question as to whether he should be spanked and made to do the thing too. As a matter of fact, in many cases it can't be done. Many a mother has had to give up, with the child the winner, and then mother has been the one to "lose face." No parent wants to do that with his child.

Some one says, "Yes, but you have to insist upon some things. For example, a two-year-old must go to bed and take his nap; he must sit on the nursery chair." True, but he has learned these habits long ago; and should he, in a fit of temper, refuse to go, mother is quite the master because she can pick him up and put him where she wants him. And if he persists in getting up, she can spank him soundly and make him stop. She can always be sure of making him stop something, but never quite certain of being able to make him do something.

Punishment. Punishment after a thing has happened, as for example, running away or playing with matches, is sometimes necessary; and coming as a positive reminder of the grievousness of the offense it is a safe procedure as far as the morale

of either parent or child is concerned, and may serve to impress the importance of obedience to certain restrictions.

Obedience. The habit of obedience having been formed during the first months, obedience to certain home regulations, during the first year or two, as for example not going outside the yard, running away, eating between meals, coming when called, will all have become such a matter of course that the child's happy coöperation in the home will be beautiful in its results. There will be few signs of weakness on the parent's part, such as the fruit dish or the candy box being hidden or the cake put on the top shelf so that Johnny and Mary cannot find it. There will be little of this sort to show that mother and father are still matching wits with their children, but all will work together with the common ideals of healthy bodies and a happy home.

Let Baby Learn to Do. The positive element in baby's training is very important. He must early learn to do things. The don'ts of the early months accomplish a purpose, not only in developing his power of inhibition but also in making possible a positive control that serves as a foundation for directed, purposeful effort. The more he learns to do in a positive way, the less necessary will the don'ts become, until finally as the child leaves babyhood they may be almost entirely replaced by positive suggestion. The much more interesting do's gradually come to take their place in the foreground of his experience. This stage in baby's training having been reached, the word don't continually used may do definite harm, and should be replaced, as far as possible, by the positive do.

Baby's Positive Urge. The positive urge in baby is very great. The desire to move himself about, to creep, to stand, to pull himself up, to walk, comes naturally and instinctively, and he needs little if any help in initiating these things. But having at last become an independent animal able to get about, he is overwhelmed with an insatiable urge to do more. The energy heretofore spent in aimless activity of arms and legs must now be directed toward some definite object. The perpetual motion of babyhood is beginning to be the directed effort of the child, and this is where mother's initiative plan for him comes as a valuable direction of his impulses toward incessant activity. He

has learned that there are some things he cannot do, but these are few compared with the wonderful things with which he can be continually busy. In his pen with his toys he has paper that he can tear, spoons that he can play with, things he can pound, the cloth book that he can treat recklessly. He is placed often enough on a penned porch, in a nursery, in a plot in the back yard, so that he learns the joy of freedom to do all that he pleases with what is at hand, without the unpleasant "No, no" or "Don't." Instead of "No, no, baby mustn't do that," it is, "Here's a ball for baby," "Yes, baby may pound with a spoon," "Baby may play with the doll." And baby learns that mother's many happy do's more than make up for her occasional don'ts.

Opportunity to Develop. It is important that from now on the child should be given every opportunity to develop his latent ability to do things, and in the doing of these his life will be so full of positive interest that, with gradual lessening desire for those things that are forbidden, he will go on his happy way in the joy of continual accomplishment. An idea of a few of the possibilities involved in some of the do's will be further suggested in following chapters.

Negative Versus Positive Obedience. The difference, then, between the methods of training necessary to obtain negative obedience and those necessary to elicit the child's positive coöperation is quite clear. In rather marked contrast to the disciplinary methods necessary to enforce the don'ts, we see the gradual educational plan that must be followed if we would get from the child obedience and coöperation in those things that require positive effort and initiative. Obedience to the do's comes properly not as to commands that arouse antagonism, but as the result of example, courteous request, suggestion, and education. Negative obedience is the result of mandate; positive obedience a gradual development as the result of education and training. The happy results so essential in home discipline depend, we believe, to a very great extent, upon an understanding of the difference between these and an intelligent working upon this basis.

The two, of course, overlap and for a time continue together. But in the home where the proper plan has been followed from

the first, the child grows happily into the way that is right and leaves babyhood with his foundation for all-round development so well laid that the task of the superstructure is much easier and associated problems are much less difficult. Wise are the parents who realize the advantage of the first three years, and carefully improve the opportunity that they offer.

Please do not get the idea from this study that we have attempted to lay down any hard and fast rules. Even if rules there are, there are always exceptions and modifications to any rule. Judgment will be needed in all cases, but we believe that an understanding of the above principles will help in a solution of some of the practical problems of child training.

Baby's Disposition and Personality

Effect on Entire Life. There is nothing that so affects the life of any individual as the qualities of his disposition and of his personality—nothing that makes so much for happiness or for woe, for success or for failure, or for his value as an individual in his home or in the community. An individual's happiness and success, his position and influence in the home, in the community, among friends or strangers, in business or profession, is determined almost entirely by the quality of these traits. Even facial line and expression, body poise and contour, and his general appearance are molded by these factors in his make-up. What an individual is depends very greatly upon these two, and every person grows to look what he is. Thus physical line and configuration follow the lead of the mind and spirit.

When Is Disposition Determined? When is our baby's disposition determined, his personality destined? Is it away back in the hereditary genes, therefore something over which no one, not even himself, has control? or is the molding ours to begin, and the final accomplishment his as the result of our teaching? To what extent are hereditary factors responsible, and how great is the influence of early culture? Baby comes honestly, we will say, by a bad temper—gets it from his grandfather on his mother's side. Mary has her father's stubbornness, and there is nothing to be done about it, for it was born in her. Must our children go through life handicapped by these most undesirable traits? Must we accept these things in our offspring, and resign ourselves to what cannot be helped? Surely not. Difference in temperament and nervous make-up are very marked, even in the infant. We have been very much interested in the development of a pair of twins—boy and girl. The great difference in the dispositions of these babies, even at a few weeks, has been most interesting to note. The nervous jump of one to a startling sound, the placid indifference of the other; the quizzical expression of the one, the wide-eyed thoughtfulness of the other; the buoyant grip and muscle response in the

first, the rather relaxed, comfortable attitude of the second. Emotional impulsiveness as against poise and thought, all could be visualized for the future in these two babies.

Inherited Tendencies. Every child is born with certain tendencies. True, children do inherit traits in great variation from their forbears; but how important is environment and home training, that certain traits may be softened, toned down and controlled, and that others may be strengthened and developed. Many types of individuals are born into this world, and it is well that this is so. The world might otherwise be a very monotonous place. But in the development of the child's disposition and personality certain traits become assets by being properly controlled and directed. Others become of great value by being developed.

An Example. One child's sensitive emotional nature may, with proper direction, become a very valuable personality trait. Another child's natural strength of determination and will power, if controlled by wisdom and judgment and a properly disciplined nervous system, may become his greatest factor in success. For another child, with a naturally pliable and yielding disposition, success in life can come only with the development of the qualities of self-reliance and initiative. The very thing that would make him delightful and lovable might be his greatest handicap without the development of certain other things in his make-up that are weak. One child is impulsive, perhaps,—a good fellow, a fine mixer,—but the very traits that make him so likable may mean his downfall in after years unless controlled by the development of good judgment and moral sense. Still another is quiet, thoughtful, naturally keeping more to himself. Caution and deliberation seem to have been born in him. These very good qualities may be his greatest hindrance in life unless balanced, in their negativism, by the development of more positive traits.

Early Influences. No one will deny that early surroundings and influences have the very greatest effect in determining the repression or the development of almost all character traits. The well-trained baby early learns to control his temper by proper discipline. When in a fit of passion he strikes or throws

or screams, the summary reaction on mother's part soon teaches him to hold such an impulse in check. He learns so young not to do this sort of thing that, as he grows older, he has no memory of ever having yielded to such an impulse. He has learned to control his emotions, and the development of his emotional brakes has become so definite and decided that the very thing that might have spoiled his life has become his greatest asset, in that it has developed a strength of character that he otherwise might never have had.

Weaknesses Made Strong. The child who begins to pout and back up in a corner and will do nothing finds so early that the results are only loneliness and that the happy family goes on without her that she soon coaxes her better feelings into the ascendancy, and this so often that by and by the unhappy complex falls into harmless disuse, and she either forgets that she ever had such an impulse or has learned to control it automatically without thought or effort. The timid, bashful child, in being allowed very early in her life to do positive things in the way of helping mother, buttoning her own clothes, cutting out and making things, will, in the delight of accomplishment, develop an initiative and a sense of ability that will crowd out the sense of weakness that might later have developed into an inferiority complex. The irritable, fretful, nervous child who would develop into a whining, unhappy, self-centered individual will, if careful attention is paid to his physical program and he is kept in cheerful, happy surroundings, with the example continuously before him of serenity and poise on mother's part, tend to develop nerve stability. And this will prevent the indulgence of a habit that would in later life have become so a part of his personality as to make him a most disagreeable individual. This initial training will have been carried on so early that he will never have any memory of it, and by constant disuse the unhappy thing will have largely died out of his make-up.

Influence of His Elders. But in spite of type there is no question that baby becomes, to a very great extent, a replica of his elders. He is continually attempting to imitate what he sees about him. If he sees temper, stubbornness, fretfulness, whining, and irritability displayed, any such tendencies on his part

in these directions will be greatly strengthened. But if he sees around him the evidences of self-control, serene faces, and happy, helpful conduct, he unconsciously assumes the same, with less and less tendency to develop anything to the contrary. The habits of the people about him become his own, and his disposition and personality develop accordingly.

Keep Baby's Look Outward. Baby is, of course, the center of his little world, but normally he is largely unconscious of himself. He is interested in the big world about him, and in everything that he can see. So long as his look is outward and his attention is not directed particularly to himself, his development proceeds in a normal way; but if, as a result of the unwise remarks and attitude of his elders, his attention is directed continually to himself as a most important individual, the effect upon his personality and disposition is far from a happy one. Baby's response to love and terms of endearment is an outward one. He reacts in a like way toward the ones who love him. But let these same individuals—this same mother and daddy—talk about baby before him, repeat his cute remarks or tell his misdeeds, discuss his physical shortcomings or his mental state, and baby begins to look inward to himself and to scrutinize himself in a way that develops self-consciousness and selfishness. It is such a temptation to repeat in his presence that cute thing he has said or to relate an interesting experience of the day in which he was the center of attraction. But baby pricks up his little ears and soon begins to realize who is the subject of this discussion, and gradually comes to assay and very carefully to estimate himself, and finally to conclude that he is indeed a very important person.

No less interesting are the discussions about his naughtiness, his temper spells, his refusal to eat his food or to take his nap, or that "his bowels haven't moved," or that "he has such a bad cold," and other expressions of anxiety as to his physical state. Continual indiscretions of this kind will in time change the child's mental attitude from the artlessness and freedom from guile of the baby to the introspection and self-centeredness of the neurasthenic, with resultant lessened interest in things apart from himself and increased self-interest and selfishness. Let

your talk about baby be directly to him. Talk to him as man to man. Treat him as an intelligent individual. You wouldn't talk about a grown-up to another person in the same room with him, without at least including them both in the conversation. You would do your talking about him directly to him. Why treat baby differently? The results of such dealings are very definite and not altogether desirable. Baby is a person. Treat him so, and thus contribute in a valuable way to his personality.

How to Spoil the Baby

Prenatal Spoiling. To spoil our baby, we may do any or all of the following things, and be quite sure of getting results:

Prenatally consider baby a burden imposed instead of a wonderful privilege granted. But, the burden accepted and the inevitable resigned to, think more about how to keep up appearances, as far as baby is concerned, than how to give his little body and nervous system the best possible chance to grow normally. Plan more about how baby's clothes are going to look than about whether his skin, his eyes, his little body, are going to give, by their appearance, outward evidence of abounding health. Use up nervous energy and strength that takes toll from baby's developing resources by making elaborate clothes for him, and forget that he would flourish healthwise if he never had anything to wear, during the first few weeks or months, but plenty of diapers and a few shirts, and that while it might take courage to do it, yet if it were a matter of health or clothes, it would pay to choose the health and sacrifice the clothes.

Constant Attention. After baby has arrived, think more about your feelings than his. If he cries, take him up because you "just can't stand to hear him cry," forgetting that as far as his physical comfort is concerned he is no doubt more comfortable in his little bed, and that taking him up simply diverts his attention, and this continual diversion only tends to wear out his nervous system. Hover over him because he is so cute you "just can't help it." Let every caller have a look at him and give him a chuck under his chin, and see to it that daddy has a chance to tickle him and play with him every evening. Just keep something doing all the time, and then at night, if he cries, let daddy continue to keep him on the go. He seems to like it—the baby does, I mean. Don't you notice how he begins to cry the minute the light is turned out and things get quiet? Baby's nerves very soon get to where they depend upon excitement and stimulation, and, of course, that might have something to do with a rather erratic or unbalanced nervous system in later life.

But in this process of baby spoiling we don't want to think about the future—just live in the present, that's all.

Then, be sure to keep him warm to the point of a moist skin, if not to actual perspiration. If his hands and feet are cold, forget that this might be cold sweat due to the debilitation of excessive clothing, and put on more clothes. Protect him from the wind and air to such an extent that he becomes a tender plant unable to stand atmospheric change or the passing breeze. When he has his bath, have the room so warm that mother's body is dripping with perspiration, and be sure to have all the windows closed, and don't let any cold water touch him. Give him only warm baths day by day as long as he *has* baths, until he finally gets to the place where he doesn't have any. Don't ever let him go barefooted or play in the water in the back yard; and see to it, when little daughter finally does begin to play out of doors a great deal, that she always wears a sunbonnet to insure a good complexion.

Changing Formulas. When baby cries a great deal, be sure that there is something seriously wrong with him, and that his food doesn't agree with him, even though his stools are perfectly normal and he doesn't vomit. Be sure that he has gas pains and colic, even though he has no signs of indigestion and is steadily gaining in weight. Make up your mind that mother's milk doesn't agree with him, and then, when you have finally succeeded in getting him on the bottle, don't keep him more than a couple of days on any one formula. Just change from one thing to another in rapid succession, hoping to find the magic potion that will work the desired charm. Don't follow any one doctor's advice, but try different ones, throwing in rather frequently something suggested by an interested neighbor or relative. And if he seems to be doing fairly well, don't bother to weigh him regularly—it might make you nervous.

Laxity of Program. And when at last baby has lived through his first year, don't be very particular about following a regular program—just consider that he has now gotten where he can eat food like grown-ups and that he can have about whatever he wants; at any rate, that when he cries lustily for any particular thing, he just must have it,—your nerves simply



"This little pig went to market."

won't stand the strain of his tantrums. When he insists on throwing his rattle on the floor, say "No, no" over and over again, at the same time picking up the rattle for him. When he wants something he shouldn't have, say "No, no" three or four times, then let him have it.

That Little Thumb. If he sucks his thumb, scowl at him every now and then, and yank his thumb out of his mouth, or say "No, no" sweetly, and pull it out gently. But part of the time pay no attention, and give him plenty of opportunity to indulge when you are not looking. If he insists, in spite of your nagging remonstrances, on doing any other thing that you do not want him to do, just resign yourself to the thought that "baby has such a strong character." At nap time lie down on the bed beside him, and pat him continually until he goes to sleep. Some days give it up as a bad job, and let him go without a nap.

Sweets. When he refuses his milk and vegetables, give him bread and jam, because "he's got to eat something; he can't be allowed to starve!" And, of course, don't forget the piece of candy and the sugar out of the bowl and the ice cream cone and all the knickknacks that loving friends like to bring.

The Center of Attraction. Always let him (and especially her) be the center of attraction, cynosure of all eyes—eating or playing, whatever he may be doing when the family or friends are around, let all attention and remarks be centered upon this adorable child. Gaze upon him and talk about him until his childlike simplicity and naturalness are changed into the foolishness that results from self-consciousness, and until, feeling that he must continue the entertainment, he begins to make faces and say silly things—then punish him for it! Talk about him continually when he is around, and repeat his cute sayings in his presence. In this way you may soon have him so that he will feel very much neglected and will become quite rude if at any time others about him should be interested in anything but his affairs. In this way develop self-consciousness, self-centeredness, and disregard for others' rights and comforts. When he has said or done something especially cute, tell about it in an undertone, supposing he doesn't hear, and forgetting that even a two-year-old is far keener and more alert and aware of what is going on

about him than we usually suspect. Just consider baby a delightful toy. Allow yourself all the possible pleasure in watching him and treating him as a plaything. Then, when he gets a little older, when the things he does are no longer cute, but make you ashamed of him, scold him, shake him, and punish him for doing the very things that he has unconsciously been trained to do.

Have we overdrawn the picture? Have you ever seen children treated as above—perhaps your own?

Baby's Chances Greatly Lessened. The course outlined above will invariably lessen baby's chances of reaching that standard physically, mentally, or morally for which he has potential possibilities. There is a more or less arbitrary standard in our mind that is considered normal. If our child comes somewhere near this in general, and does not fall too far short in any one particular, we are satisfied and thankful that things are no worse. It is a fact, however, that no child or individual of any age is as fine or as near perfection as he might have been, because no one knows all there is to know about child rearing, and none of us do as well as we know. But if in a spirit of consecration to the object of making our child reach the highest possible standard, we devote ourselves to the study, persistent application, and effort that would make it possible for us to follow a more nearly ideal program in caring for the developing man or woman placed in our care, there is no question that the finished product would in most cases far outreach what is now considered normal.

Expect Great Things. Children are born, each with different inherent possibilities. Let us so study that by our training each child may come much nearer his possible high standards, and in this way not only make our own children better, but raise the average normal line. Do not plan for him just to get by, but from the very beginning devote yourself to the program for him that will insure the development of the very best that is in him.

How Not to Spoil Him. The only way *not* to spoil baby is to take him more seriously. Treat him with the respect due a man-in-the-making, and give him the chance he needs. We cannot always reform our friends, but, by taking the right attitude, we, as parents, can do much to offset the wrong attitudes of baby's many admirers.

SECTION XII

Baby's Education



LAMBERT

Baby is a very alive and alert little creature who is anxious to do things.

Baby's Physical Education

What Is Education? Our thought of education has long since changed from the idea that it is purely an acquiring of knowledge from books or of skill in calculation, or the amassing of information along special or general lines. We have at last become fully conscious of the fact that education is a training for life, that it is a gradual development of the physical, mental, and spiritual, resulting in the individual as he is when he has attained maturity. We are beginning to understand that education is that scheme of life and life's contacts whereby there is determined the type and standard of attainment which will be reached by any individual at the time of his fullest maturity. And we are learning that everything that enters into the environment of the baby and child at home, in the church, in the school, or outside of these, enters into the education of the individual, and has a very great determining effect upon the final result.

Physical Education and Habit. The physical education of the baby has to do with the establishing of physical habit and all things that pertain to his physical development. We can in no way separate the physical from the other phases of education, as the physical is the basis for all; mental and spiritual states react very definitely upon the physical. But we may think of the physical as being that part which has to do with organic function and the use of the body as a whole or in part. The right physical education is that which secures right habits of eating, sleeping, cleanliness, exercise, rest, and organic function. Physical education begins at the moment the baby is born, and the establishment of correct physical habit is one of the very first things that is accomplished for the baby. Again, as we have done so many times before, we urge the importance of regularity as regards all things that have to do with baby's life from day to day. In this way, definite regular habit is formed that establishes an easy groove for the performance of all physical functions. The work of the body can then be carried on in the easiest and most effective way, with the least tax and strain upon the nerv-

ous system and governing centers, and the least wear and tear on the body itself,—thus from the very first we shall be able to accomplish something that makes for a broad, efficient life and length of days.

Build for the Future. Do not think, mother, only of the immediate effect of some particular thing upon baby's health. Final, lasting, and more important results can never be measured by any symptom or by any immediate reaction on baby's part to any one thing. These things that we do so systematically for baby day by day are a part of his physical education, and will affect him until the day of his death—and that day will certainly be postponed (barring accident) if we do our work intelligently and well. The importance of proper physical education cannot be too strongly emphasized; and let no mother think, when day by day she goes through the same endless routine, that she is working only for the present—that her efforts avail little, that she is simply getting her child through babyhood. She is doing far more than this. She is building a man or a woman. She is doing a work that will tell for all time and for eternity. Upon the ability of mothers to do this work as it should be done depends the welfare of the nation and of the world.

Encourage Development of Physical Powers. Just how to carry out the normal program for a child during his first two or three years we have discussed at length in previous chapters. There are a few other things as regards baby's physical development that may well be said. There are possibilities in this child before us of which many of us have not dreamed—possibility of attainment and accomplishment never realized because intelligent thought and care are not given to those things that would assure a more complete and all-round development. We have in this child a very keenly alive and alert little animal anxious to *do*, and we are continually saying "Don't." While, as has been said in other chapters, the don'ts must be recognized during the early months in order that the child may learn the art and power of inhibition, yet it is of utmost importance that we permit him continually to do the things that will satisfy his desire for action and imitation, and thus permit a larger and more beautiful development of his body powers.

Baby's Hands. Baby's hands are his first means of investigation. He learns first to grasp objects. He touches them, and acquires sense of shape and feel. He learns how to use them, and should be allowed to use them as far as it is possible. The earlier he is allowed to hold and to feel certain objects the sooner will he become familiar with them. And the more varied the objects given him for his play or his use the greater will be his information in regard to them. With a little attention paid to the matter, a baby, even as early as three months, may be taught to grasp objects of various sizes and shapes. And by holding these things at varying distances from him, he will acquire a sense of distance. Mother may well spend a few minutes with him each day in a little play to this end. It should be only a few moments, of course—not overtaxing his nervous system or his powers of attention in any way. If baby is allowed to lie in just his shirt and diaper, he will very soon find his own toes. Mother can help him at first to become acquainted with them. He may be allowed to feel the bottle that is carrying his water or orange juice to his mouth. Mother may place his little hands about it, and help him to hold it.

Name Objects. As various objects are put in his hand, they are named by mother; until, by the time he is six months old, he may have had his little hands on nearly everything in the room, and may show by his eyes that he recognizes objects when mother names them. At about this time, he may have learned to put out his arms to be taken for his regular tour about the room—to feel the clock or the pictures or the bed. He becomes familiar with garments and where they belong, until by the time he is a year old, he may begin to try to dress himself; and it is well if mother, instead of discouraging this because she is in a hurry, encourages him in this desire, because this will hasten the time of his independence and the time when he really can be a help in the home.

Toys. Toys play not an unimportant part in baby's education. A bright-colored, noisy little rattle is usually the first thing that he enjoys the feel of; and he glories in its possession. Its shape, color, and sound help materially in the education of his senses. Then a bell and a ball may soon be added, much to

his delight. Directed effort in throwing and bouncing the ball help in developing muscle control. Other simple toys naturally follow in the wake of these, but should be simple, substantial, and waterproof, and they should often be scrubbed.

Homemade toys are often far superior to those bought at the store. A string of spools, large buttons safely strung so that there is no chance for button swallowing, and other like things may lend variety to baby's play.

And then there are the blocks that every baby loves by the time he is a year old. These form a never-tiring pastime that increases in interest and value as baby grows older. Plain white blocks are usually better than colored ones. Any carpenter can make a set of different shapes and sizes, and daddy, mother, brother, or sister, can sandpaper them smooth. Colored ones will delight baby, but should not be given him unless they are waterproof and are kept clean.

The child of two or three years will enjoy most the toys that daddy makes. A pattern drawn of cat or duck, then cut out of cardboard, then with a coping saw cut out of the end of a large grocery box, then glued to a standard on wheels made perhaps of button molds,—and baby has a toy in which he will greatly delight; or a box on the same kind of wheels, with a string to pull, and again a valuable toy is added without expense. If a toy breaks, a careful mending will teach baby thrift. A flimsy toy easily broken and as easily discarded for a new one means defective character building.

Then finding a place for these toys and teaching as to proper care of them develop an important element in baby's character; and, as he consents to let brother or sister play for a while with some cherished toy, lessons in unselfishness are learned.

Finger Plays. These, too, are helpful,—yes, and toe plays as well,—for what would baby do without these time-worn "classics"?

"This little pig went to market,
This little pig stayed home."

"Pat-a-cake, pat-a-cake, baker's man,
Bake me a cake as fast as you can."

And a little later—

“Here is the church,
And here is the steeple;
Open the doors,
And see all the people.”

I don't know but that we grown-ups still like these simple plays as well as the youngsters do,—anyway, we enjoy playing them with the little tots,—and still zestfully clap hands with him and say,

“Bean porridge hot,
Bean porridge cold,
Bean porridge in a pot
Nine days old.”

Helping Mother. By the time baby can walk, he will love to follow mother about when she is working, and it will not be long until he can be allowed to think at least that he is helping. And oh, how baby does long to do the things that mother is doing! A little thought at this time will utilize this urge at just the time when it will accomplish the most for baby in his development. How he will delight to help mother dust! With a nice little dust cloth in his hand, he will go through all the motions that mother is making. A little flour or talcum powder on a chair round for him to wipe off will visualize to him the reason for the little cloth that he is using. Of course, baby mustn't see mother apply the artificial dust, else he would be more interested in the application than in the removal—much to mother's distress. Often mother will find a piece of furniture with enough dust on it so that baby will see the actual outworking of the process without any pre-meditated application. And he will so want to help mother carry dishes and spoons, and this should be allowed as far as it can be managed—even to a few special nonbreakables to be intrusted to his care, or a few inexpensive cups or glasses, the occasional breaking of which would mean little. He will be very happy if mother will stop for a few minutes some morning and devote herself to letting him do a few things that he so wants to do—perhaps let him carry a glass of water from sink to table. If he spills a bit, he is given a cloth and allowed to wipe up the water.



ROBERTS

One of the ways to help a child develop independence is in the matter of dressing.

Practice at this will steady his little muscles, and he will soon acquire surprising efficiency. Even before he is two years old, he may help mother set the table, wipe a few dishes, and do many things that will be a delight to him and make him feel that he has an important place in the family scheme. He will help mother pick up lint and litter from the floor. He will learn where things belong, and put them away.

Dress Himself. He will, with mother's help, put his own little coat and dress on tiny hangers. (Cut off the ends of the hangers to fit his little shoulders, and place the hangers on hooks or a rod that daddy has placed low enough for his reach.) He will have learned more and more about the process of dressing and undressing, and, because mother has always let him help, he will be able to do it entirely for himself much sooner than the

average child. How patiently and persistently he will work to make that connection between button and buttonhole! He will enjoy playing with a garment, and be intensely interested and delighted in what to him is the play of safely placing that buttonhole over the button. It will not be long until he can put it to definite practical use. He will love his little handkerchief—keep it in his pocket and learn to use it properly and put it back where it belongs. Any of these things he should be well able to do before the age of two.

Let Him Use the Scissors. And he does so love to use the scissors! "What, let a baby have the scissors? Never! That would be a terrible thing!" But why not? Get him a little blunt pair of his own. Teach him a definite place to keep them. Give him paper to cut, and let him cut to his heart's content. When he tires, mother says, "Let us pick up the papers." And baby is always glad to help and to put his little scissors away in their place.

Utilize Natural Urge. The importance of letting baby learn to use his hands and develop his own powers of balance and coordination cannot be overestimated. It will mean so much a little later in making him not only a help in the home, but in giving him a sense of self-reliance and dignity. Its effect upon the character and upon his dependability as an individual will be very great. He will learn to do, at a time when his urge is entirely in that direction, the things that later he must know how to do. His own natural urge and initiative are utilized, and he learns to do the things, which, if teaching is delayed, will need to be enforced under the stress of nagging and disciplinary measures. The latter will have far from the best effect upon his nervous system, and many things that he might so easily have learned he may never learn as he should. The time of baby's urge to do these homely duties is the ripe time. Never again will the advantage be so great or so truly ours.

What May Be Accomplished. The late Dr. Margaret Clark, of the Parents' Educational Center of Long Beach, and her husband, Dr. George Hardy Clark, have done a great deal of work along this line; and we herewith append the conclusions to which

they have come after many years of investigation and observation of thousands of children, as regards the physical attainments possible with normal children during the first three years. Let no mother be discouraged. Her child may be quite as normal and yet not reach just these standards. She may not have time to spend to accomplish it. But it is interesting to know what might be accomplished, and may help her to appreciate to a greater extent the importance of letting her child do, as far as it is possible, the helpful things that he is so anxious to do and which play so important a part in his physical education. Take advantage of his desire to "help mamma."

Program of Playwork. "The following playwork is adapted to children from three to thirty-six months of age. If the games are played happily and regularly with the child, it will become the joy of his life to use them in a skilled and helpful way.

"At **THREE MONTHS** he should be taught to grasp objects of different sizes and weights held at varying distances from him. He should find his legs, put feeding bottle to his mouth, and use the vessel.

"At **SIX MONTHS** his fingers should be familiar with all objects about the room; with marbles, blocks, etc. He should know where the clock, fish globe, and other objects are located when they are named. He should put out both arms to be taken.

"At **NINE MONTHS** he should pat-a-cake, wave greeting, kiss hand, pile blocks, find own teeth, hair, tongue, pull off shoes and stockings.

"At **TWELVE MONTHS** he should cover face when playing peekaboo, put shoes and stockings to feet, assist in dressing and undressing himself, dust flour off chair rounds when helping his mother, roll ball with judgment—different distances.

"At **FIFTEEN MONTHS** he should carry glasses of water to and from the table, help wipe splashes of water from the floor, dust and sweep with individual cloth and broom, button and unbutton clothes, and properly lay away his shoes.

"At **EIGHTEEN MONTHS** he should help set and clear off the table, wipe a selected dish or two, paste strips of paper to make squares and crosses, unpin safety pins in clothing, unbutton and

pull off shoes and stockings, use handkerchief and replace it in his pocket.

"At TWENTY-ONE MONTHS he should cut strips of paper with blunt-pointed scissors, and paste them on pieces of pasteboard to make crosses, squares, and triangles; cut pictures out of papers and paste them into books; put on stockings and hat, pull off jacket.

"At TWENTY-FOUR MONTHS he should string beads with needle and thread, select colors of beads with accuracy; sew buttons on cloth, sew pieces of cloth together, mend dress, darn stockings; voluntarily pick up broken beads, etc., and put them in the wastebasket; turn back bed covering and set up the pillow to air on arising; help make the beds.

"At TWENTY-SEVEN MONTHS he should wash his own hands clean with soap and water, particularly after coming from the toilet; brush teeth, help with bath; wash selected dish or two; paste strips of paper on cardboard to make appearance of picture frames; cut pictures from book and paste accurately.

"At THIRTY-ONE MONTHS he should be able to cut strips of paper and paste on cardboard to form A's, X's, L's, and H's, and should know name of each; pick over beans, break spaghetti, and do other similar work in a trustworthy manner.

"At THIRTY-FOUR MONTHS he should fold paper to make hat, fold paper from which to cut out the round letters of the alphabet; cut out S's, O's, D's, etc., and know their names; paste letters on cards to form words of one syllable.

"At THIRTY-SIX MONTHS he should build slightly houses with building blocks; cut out pages from wall paper to make scrap-book and fold and sew them together; paste pictures into scrap-book with good understanding as to appropriateness of subjects; nail pieces of lath together to make squares and triangles; draw crude picture of house and round human face; help mother by ironing flat pieces with a light hot iron; bathe himself in a satisfactory manner."—"A System for the Care and Training of Children," page 20, by G. H. Clark, M. D.

Baby's Education as Related to His Future Sex Consciousness

The Sex Instinct. Following hard upon the physical, as a part of it and yet connecting it very closely with the mental and spiritual, comes that part of baby's training that has to do with a nervous and psychological mechanism without proper place until the marital life of later years, and which normally should lie dormant—a mere potential—until awakened under proper conditions of life and love.

The sex instinct, that great motive force on which is built all social economy, which forms the strongest ties of love and affection, which is the greatest factor in human love and sorrow; that attraction which forms the greatest bonds between human beings,—between man and woman, between parent and child; that thing without which life would be barren and would itself go out, without which baby would not be here in his beautiful, flowerlike purity—the most beautiful flower that ever was created, the loveliest, the most beautiful of nature's gifts; that thing which is the source of most of the world's happiness, the fountainhead of most of its woes; that which can lead us nearest to God or drive us farthest from Him; that which may be the most beautiful of all our experiences or the ugliest; that force which, given as our greatest blessing, may become our greatest curse; that which was given to be the highest and holiest emotion known to human friendship, but which may come to be the lowest and most degraded of all that has to do with human relationship. In what way, pray tell, can there be any connection between this and the education of the baby? Well enough for us who are older to consider it and carefully weigh its problems, but surely there is little need for a discussion of it in connection with the care of a little child.

The Baby's Subconscious Mind. Yes, but there is! Our talks about the baby and our responsibility to him are not com-

plete without a discussion of this very subject and a knowledge of certain psychological situations for which thoughtlessness and a lack of necessary imagination are largely to blame. When we stop to think that oftentimes the things that affect one's life in the greatest degree are those things that have become a part of one's subconsciousness even before the time of which one may later have any memory of them; that every phase of life in after years is influenced greatly by what has happened in its first half-dozen years, it is well for us to consider whether or not there is anything in the first three years of the child's life that could possibly have any bearing upon his future sex life or sex emotions. Since the beginning of all things human is with the baby, there must be some beginning related to this part of his later life that is influenced, to an extent, by his baby environment and training.

Self-Control Fundamental. As the greatest of self-control is needed as regards sex instinct and emotion, the part of baby's education that has to do with the development of his general power of self-control has a very definite bearing upon his after sex life. As he learns to obey and to do right regardless of impulse, a foundation is being laid in his subconsciousness that will stand him in good stead through the years when the control of this phase of his emotional life is so greatly needed.

Well-Poised Nervous System. As upon the basis of right physical program his nervous system becomes established and poised, he is again acquiring a very definite asset as regards the normal development and control of his sex life. Because of the fact that sex irregularities are often due to, or heightened by, a poorly balanced nervous system, it is of the utmost importance that the naturally nervous child have special attention paid to the program that will lend itself to the building for him of a strong nervous system.

The Beauty of Life. Cleanliness, frequent bathing, with a free use of cold water, fresh air and sunshine, the inculcation of beautiful ideals by a love of the beautiful in the great outdoors, all tend to lead him away from any tendency toward the slime and filth with which his sex instinct might as he grows older become contaminated. The beauty of his home, simple and

humble though it may be, in its cleanliness, orderliness, and the love that he sees and feels about him and for him, will help to keep his ideals high above the mire of sex degradation.

Of Practical Value. There are a few practical things in direct connection with our subject that are quite important for mothers to know. In the first place, there is an advantage in baby boys' being circumcised. Circumcision assures cleanliness without handling, and greatly lessens the liability of local irritation. The circumcised baby boy is kept clean without any special attention more than his regular bath, while the baby boy who is not circumcised must have the daily drawing back of the foreskin and the cleansing of the part underneath. This must continue, and requires a handling that is never necessary when circumcision has been done. There is either this attention or, as the result of neglect, a lack of cleanliness with its consequent irritation. Baby girls in their infant days should be kept clean, especially inside the tiny mucous folds of the external genitals, so that adhesions may not form and thus produce sensitiveness and irritation. If this is given proper attention during the first six months of the baby girl's life, there is little fear of such adhesions being formed later with the resulting irritation. And from this time on, any washing of the parts may be more casual, so there may be no special direction of baby's attention to their sensitiveness. Circumcision of a little girl is rarely advisable. Occasionally in the case of an older child it is necessary to break up adhesions that have formed as the result of a lack of proper care during infancy.

Self-Consciousness. With this purely physical foundation, we have yet a still more important thing to discuss, and that is the influence of the mother upon the baby's psychology and self-consciousness. Many a mother has been the first one to develop in her child a self-consciousness as regards the sex organs, when her greatest desire has been to safeguard the child against that very thing. How has she done this? She would be horrified at the thought. Let me tell you. The baby boy lies on his bed; mother is changing his diaper. His little hand waving about accidentally touches his genital organ. Mother, with her usual waste of negative syllables, says "No, no" with more than usual

emphasis. This happens often. Baby grows a little older. Just as he finds his feet, so again when occasion offers he finds this forbidden part of his body. Instead of directing his attention to his rattle or in some way diverting his little hand, mother repeats her "No, no" with a note of alarm in her voice, and jerks his hand away. After this has happened several times, she picks him up roughly, and even slaps his little hands, and looks at him quite fiercely, until he gradually comes to feel that there is something wrong about that part of his body, and that he dare not investigate. His attention has been called, by mother's attitude, to the very part of himself that she wishes him to forget. The very negativism of the situation arouses his curiosity, and he gradually comes to have a morbid interest in that part of his anatomy without ever knowing why, and long after he has forgotten everything about the early incidents. Instinct, you say? No, mother did it by her overanxiety and mistaken zeal; and she continues to do it. She never lets him forget, and by the time he leaves babyhood she has made him abnormally body conscious.

Pay no apparent attention to baby, whether boy or girl, as he investigates any part of his little body. Divert his attention whenever it seems necessary, without giving any idea that you are seeking to do this. Never let him think for one moment that one part of his body is any different from another. And beware of any nursemaid or helper who, though ever so well meaning, would make such a mistake. If anyone is helping you to care for your baby, instruct her very carefully in regard to this. When baby gets a little older and has a baby sister or a baby brother, do not by your attitude arouse curiosity in regard to the new baby's body. If Johnny, two or three years of age, has a baby sister (or Mary a baby brother), don't send Johnny away whenever baby's diapers are being changed. And some day when Johnny asks a leading question about little sister, just explain that little girls are made differently from little boys. Tell him this just as you would explain to him the difference between two flowers or any other two things in nature. Likewise explain to little Mary when she inquires about baby brother.

Natural Curiosity. Perhaps if this plan were followed, we would not now and again hear of a boy of four or five taking the

clothes off a little girl to see what she is like. And then feel that the little boy is a dyed-in-the-wool villain and that "blood will tell"! Children often do things that appear to the adult as very great sex sins, without any thought of sin in their childish minds. And because this is true, the greatest of caution should be used in reprimanding a child who has committed some such error; for, by so doing, the child may be given a sense of guilt and a morbid memory of the occasion, which will develop a sex-consciousness that might spoil his entire afterlife. Far too often the sex sin has been the thoughtless one of the parent. Children do not commit sex sins; that is left for their elders. And no doubt much of the sex irregularity in the world is due to the fact that children grow up with the wrong idea of their bodies, and, having done so, pass on the same morbidity to their children, and so on, *ad infinitum*.

Irritations. Babies do at times develop certain sensitive conditions that may lead to their handling of themselves. Irritation due to lack of needed circumcision, to lack of cleanliness, or to wet and soiled diapers or panties, leads to a consciousness and handling that may be pernicious in its results. The greatest of care should be taken that baby's body and clothing be kept perfectly clean. Let there be regular baths and clean clothes day by day. For the older baby, little knit undergarments that can be washed out every morning and do not need ironing are practical; or any simple plan that will make the task of daily cleanliness not too great.

Intelligent Care a Safeguard. Because of neglect, habits of handling and emotional excitement may result, but we believe we are safe in saying that such unfortunate conditions need almost never arise if there are reasonable care and foresight on the part of the mother. If a perverted sensitiveness has arisen, with resulting masturbation or any tendency toward it, special attention to cleanliness, correction of irritation, regular program with right food and sufficient sleep, should form the basis of correction. Careful supervision, with plenty of interests for the child outside himself, is important in the overcoming of the habit. And rarely will a child of the age of which we have been studying prove a difficult case for cure. If so, he or she should

be taken to a baby specialist, and expert advice be obtained as to management. (See page 275.) Robust health, the development of the child's love of the beautiful, and the avoiding of anything that will tend to morbid self-consciousness are the conditions that safeguard the child from developing sex-consciousness or any other thing that might lay a foundation for sex irregularities during the later years of childhood.

The Greatest Need. Surely, training for intelligent parenthood is the world's greatest need—that men and women may be ready for their most important task, that of molding their children, in body, mind, spirit, and emotion during the time when the molding is easy. Thus only may we see corrected in any measure the mistakes that have been the greatest handicaps of the generations that have gone before.

Baby's Mental Education

The Controlling Center. Nor can the mental be divorced from the physical, for the mind is over all. There is no physical activity without power current from the mental centers. And the physical things that baby learns to do are dependent upon the control and coöperation of the mind. As muscle, poise, and efficiency are being acquired, so is the power of nervous and mental control strengthened and increased. The mind is the general manager that governs all physical action until such time as certain physical acts become reflex and automatic, so that they may work for themselves without special attention from the chief center.

Reasoning Powers. The time comes in baby's development when attention may well be paid to his power of thought,—that higher function of the mind which is carried on independent of physical activity and for which, the automatic having been established, the conscious centers were especially designed,—the time when baby's intelligence must come in for its special education. Baby's intelligence has, of course, been developing along with everything else, and on the right physical program as a background, he has come to be more and more keenly alert. In fact, we are daily amazed at baby's display of intelligence. Is there anything to be done now that his wonderful power of thought may be utilized and directed; that his powers of intelligence may expand in the right direction, and result in that development of thought and acquisition of knowledge that will mean the most for him in his preparation for life?

Surroundings Determine Mental Activity. Again we may say that much more may be accomplished in this regard than is ordinarily supposed. We are so prone to take things for granted, and to accept as our standard things as they have always been. Who knows the possibilities of the human mind, or what it would mean could a full opportunity for development be given the child at the time when his mind is most receptive, most ca-

pable of receiving whatever there is to be had. Baby learns by seeing the things that are continually about him, by hearing the varied sounds in the home. His intelligence develops particularly through what he gets from other human beings—the words that they speak, the expression of their faces, the tones of their voices, the things they do. Home culture, facial and spirit control, the English language perfectly spoken, mean important mental education for the baby. He loves the tone of mother's voice, the smile on her face, the sound of her words. It is his delight to copy, and he responds in kind. These of all influences are the most important and the only real essentials. However, as we have just suggested, there are realms of possibility of which few have dreamed. Let the parent who desires and can find it at all practical try out something of the following plan of utilizing and directing baby's receptive and almost appealing investigative mental state.

The Play Lesson. Let us suppose that baby is eighteen months old—perhaps two years, or two and a half. Mother makes with pencil or scissors a big round O, and attracts baby's attention to it and tells him that is O. It is no time until baby remembers, and with delight recognizes O wherever he sees it. He sees O's everywhere. In a few days she may add other attractive letters of the alphabet, one at a time, as S, X, and perhaps Z. There is no hurry about this, for there is much time, and mother in no way devotes herself to this thing to the exclusion of other more important ones. This is only occasional and apparently casual, but is no trouble at all; and it is perhaps the easiest thing in the world for baby to become thoroughly familiar with his letters in six months to a year from the time this is begun. It is no tax upon his nervous system—just a little play that he and mother have, like the playwork of the previous chapter. This is a play lesson.

No, you wouldn't bother to teach him his letters if he were ready to start to school; but we are years ahead, with ample time to jog along. And never is the thing urged upon a baby if he is not in the mood. (You have heard of that thing being done after the age of six, haven't you?) Never is his power of attention taxed (that sometimes happens to older children too), and

so it works out very nicely for him to have as a foundation for his reading a familiarity with those characters upon which the sounds of the words depend.

Teaching Himself to Read. With such a foundation, again we have one of the most natural things in the pleasant pastime, if you please, of teaching baby to read. Even before the age of three, baby sees the word "hot" on the bathroom faucet. He recognizes the letters, and mother explains that those letters put together say "hot." She tells him this very casually, but he asks her over and over again, "What does that say, mother?" And just as often she answers, "That says 'hot'." One of the happy things about babyhood is this insistence of endless repetition, so tiresome to us older folks but which becomes a joy when we see in it the accomplishing of baby's education. At the same time, he learns the word "cold." And all about him everywhere he sees letters put together to make words. Oftentimes he will come along with a magazine—some advertisement, perhaps—with a conspicuous word, and mother may take occasion to tell him that those letters say "boy" or "cow" or "Shredded Wheat" or "shoe." It is all a part of baby's play. Some simple plan like picture cards with animals or familiar objects of any kind and the name below, make the teaching of the child a simple thing, and one the foundation, at least, of which may well be laid in babyhood. And not only may these pictures (and such beautiful ones can be cut from magazines and mounted on cardboard) be the means of teaching words, but many other valuable things may be taught the child from them, and in the study of the picture his powers of observation and analysis may be greatly increased.

Geography and Arithmetic. A globe will be baby's delight, and may furnish a basis for teaching geography with stories of trips across the sea and land and mountain, which is all delightful play for the tiny lad or lass. Baby learns to count. "How many apples has baby?" "How many folks at the table?" Counting fingers and toes, pennies and what not, the idea of enumeration breaks in on his little mind, and he begins to have a complete understanding of what is meant by "how many?"

Physiology. He early begins to study physiology. "Where does the bread and milk go?" "Where is baby's stomach?" "What does baby do with his eyes?" "Where is baby's ear?" And as time goes on, physiology stories explaining body function are among those that baby enjoys most of all. Along with other nature stories, they take their place in forming an important fundamental part of baby's education in increasing that fund of information he will always appreciate more and remember better because it was given him at this impressionable and greedy age. The little mind, eager to know, is in a nascent state that makes easy our part.

Nature Stories. Then there are the wonderful stories of nature. "Mother, what makes it rain?" And, "Mother, what makes the snow?" And, "Mother, what are the clouds?" And, "Mother, what is this, and what is that?" "What makes the water go down the pipe?" And, "Where do the birds live?" The questions come so thick and fast that at times we are helpless before them. But let us remember that these are the times that we must not neglect, and that whenever a question comes that enables us to tell a nature story or to impart information it is one of our highest duties to answer that question; and it is a great neglect to fail to do so. With some babies, the "What's that?" will begin even before the age of two. Anyway, it usually begins to come thick and fast sometime between the age of two and four—the time in baby's life, whether boy or girl, when everything he sees will stimulate the query, "What's that?" Just as continuous may come the reply, and baby learns and learns as the days go by. Rare indeed should be the occasion when his question brings the response: "Run away, dear, mother is busy." If this is done too frequently, the time will come when there will be no more questions, and the boy or the girl will seek information from other and far less desirable sources; and we shall have lost not only the opportunity to educate, but also the privilege of maintaining that comradeship and confidence for the loss of which we shall spend sleepless nights and weary days. And the information that would have been so eagerly devoured, but was not given, we and the teachers will attempt to force upon our children when they are eight or nine or ten or twelve or

thirteen or older—at a time when there are negativism, lack of interest, and even resistance.

Utilize Natural Desire to Find Out. If the desire to find out, so natural to the baby, is constantly gratified, and the habit of acquiring information is well established, the desire thrives and the habit continues. The boy or girl who does not give up the whole thing as a bad job and run out to his fellows to find amusement in some other way, who continues on in the same mental trend, whose investigative propensity by satisfactory use becomes stronger, uses this urge and learns the more until the school of the land becomes second in importance to the school of the home; and the beginnings of education having been well founded, the boy or the girl would educate himself or herself if the outside school were not to be had. This is not to say that we are not glad for the established schools or do not appreciate their very great importance in the education of our children.

Educational Stories. Then there are the stories—stories, stories, stories! And what an opportunity for education! It is not every father or mother who will agree to the teaching of a child to read while still in babyhood, but there are few parents who will get out of telling their babies stories. And, let me ask, what are stories for? Is story-telling simply momentary amusement—a task that we must perform because of baby's insistence? Is it simply a pleasurable mental sensation that we are giving our child, without thought or expectation of definite after results? Is it merely an idle tale of fairy or fiction that builds for the child fantastic pictures untrue to life or to reality, which are worse for him than no education? Is it, instead of teaching him a truth, telling him that which is false? Does it arouse useless emotion, waste his nervous energy, and dissipate his powers of attention and concentration? Is it a momentary stimulation productive of nothing, and because of its false impression, actually doing harm?

Always Tell the Truth. Wise indeed is the parent or the parent-to-be who determines in his or her mind never to tell the child an untruth—never to betray the child's confidence or insult his intelligence by telling him that upon which he cannot

absolutely depend. You may think that it is only when well past babyhood that we need to give thought to such questions. Let us say again, as we have said many times, that there is no demarcation between babyhood and childhood, that all plans for the child must be begun, in spirit at least, with the babe in arms. Treat your baby always as an intelligent individual, and he will become so. His intelligence will go on apace, and his intelligence quotient accordingly.

Let Parents Become Informed. If fathers and mothers feel the need, let them inform themselves as to simple nature tales and scientific facts that may be related in story form. Travel stories, physiology stories, nature, Bible, and history stories, true stories of everyday life, all furnish a wealth of educational material that is just as delightful to the child as any fairy tale, that will develop his imagination to just as great an extent, much more normally, and in a far more valuable way. Truth is always stranger and more fascinating than fiction. And while there is so much of truth, far more than we or our children will ever have time to learn, why waste our time or theirs by repeating idle, worthless tales?

Minds Expand by Exercise. There is a statement by a well-known writer that says, "It is a law of the mind that the mind narrows or expands to the dimensions of those things with which it becomes familiar." Let us familiarize our children with truth from their infant days, that their minds may expand in length and height and breadth, and that they may reach that state of mental vision and stability which is possible only upon such a foundation.

Baby's Spiritual Education

The Spirit. We have come now to the discussion of that education which has to do with the spirit, the knowledge and sense of right and wrong, the judgment, the inclination and ability to decide for that which is best and right. There is a spiritual life that cannot be ignored, in contradistinction to that which is purely physical and material or materialistic. It is the spirit that gives life or takes from it. The spirit—that part of the individual that has to do with the emotions of love or hate, of joy or sorrow, of happiness or distress, of hope or fear, of anticipation or regret. The spirit—that which has to do with self-love and disregard of others, or with self-forgetfulness in the larger vision of the world as a whole, that which partakes of self-interest or of interest in others, in things, in principles. The spirit—that which reaches out after the good, the beneficent, and the true, or which finds a satisfaction of a kind in mere selfish pleasure, sensuality, and vanity. The spirit—that which is drawn out in response to what is beautiful and noble and lovely and fine, or is influenced by the mediocre, the sordid, the ugly, the gross. The spirit—that which feels dependence upon a higher power and looks for guidance thereto, or which in selfish independence has no sense of a Creator or of moral obligations.

The Baby's Spirit. The baby when born has no spirit. He has sensation of hunger, of discomfort. From the moment of his birth, he begins to take on the spirit of the home into which he has been born. He reacts to certain stimuli, becomes conscious of his surroundings, feels a sequence of events in his daily life, begins to realize that certain causes bring definite results, develops feelings of irritation or antagonism in irregularities, or of pleasure and delight at sight of things he enjoys. He is influenced by human sound, human voices, human hands, and he develops a spiritual reaction. His powers of imitation which develop from day to day cause him to imitate facial expression and tone of voice of those nearest to him. He copies various re-

actions. As a result of what he hears and sees, as well as the result of his efforts to imitate, emotions are aroused within him. He expresses his first emotions in the only way that a baby has of expression -- that of a cry. At first he has only one way of crying, but it is not long until he develops other ways. The cry of temper, of disappointment, of grief are all familiar to mother. He learns to laugh, to express himself in gurgles and coos of delight. He early learns to imitate mother's tones, if not her actual words. And baby talks back to us in his cooing language when only a few weeks old, so responsive, so easily elicited are his powers of expression.

The Influence of Expression. It is a psychological fact that not only do certain emotions bring about definite expression in face, and voice, and action, but also by these expressions in face, voice, or action on the part of those about us, and more especially so on our own part, are certain emotions aroused. So true is this that looks and tones of courage in times of distress lessen the feelings of anxiety that are present in one's own heart. And yielding to the impulse to express unhappiness will often increase the unhappiness. So baby's emotions and unchecked expressions of them may make a plaything of his disposition and may toss it about into a thing erratic and unstable. Of all things that have to do with spiritual education, the most important by far is the spirit of the home that cradles its newest member. I suppose if father and mother and all could be ideal in their spirit, which is the fountain of all else in the way of emotion, baby's correct spiritual education would be assured, and problems of training in that home would be few. At least it is a goal toward which every parent may well bend his or her effort and powers of consecration to attain.

Sense of Right and Wrong. Aside from this ideal background, the next important thing in baby's spiritual education is to develop in him a sense of acquiescence in the prescribed home program and to impart to him by proper training the helpful sense of self-mastery that will come to him when he has learned to inhibit his impulses and to control his inclinations. In this way baby acquires a sense of right and wrong, which is a most important part of his spiritual education. He then develops the

feeling of self-respect that comes from the ability to choose the right and to eschew the wrong.

The Attitude of Older Members. To the child the parent has become the higher power to which he must look for guidance, for love, for succor—attributes which in a fuller sense he will recognize later in his God.

In his second year the child learns to have a regard for others. He notes the kindly consideration given by other members of the home to one another. He sees that mother gladly gives up to father, and father to mother. He sees continually a spirit of helpfulness. He observes the respect that the various members of his family accord others—himself included. He learns from observation something of the rights of others and how they should be respected. And there are developed in his own little soul, as a result of these observations, emotions of unselfishness that are as a wellspring for right spiritual emotions in after life.

Religious Atmosphere. He is affected very much by the religious atmosphere, or the lack of it, in his home. He partakes of the sense of quiet and reverence that pervades the room during worship hour, during the moments of table grace, and his impulse to imitate influences him to enter into the same quiet spirit. His sojourn in a room where such religious exercises are being conducted is shortened, dependent upon his ability to enter into their spirit. For example, he is not expected to sit quietly through a worship period that lasts over twenty minutes or half an hour. It is better if he is not in the room at all when a prolonged family worship is in session. Since a child of this age could not possibly keep still, an attempt to restrain him would only meet with failure and lessen baby's feeling of reverence for the occasion. Very short indeed should be any worship at which baby is present. Baby's first worship will be his little prayer at mother's knee, at which time the benefit he will receive will be the sense of quiet and the something he does not understand that is present with him; for no doubt the angels hover near and a spirit from above pervades the atmosphere lending to baby's spirit during the quiet moment.

Family Worship. Later baby will be initiated for a few moments into the more prolonged family worship the older mem-

bers enjoy, only to be taken away at the first indication that his little nervous system is tiring. Presence with the family at worship for the two-year-old must depend upon one of two things—the worship must be shortened to the very few minutes that he may be expected to partake in it, or it must be considered a privilege that baby may enjoy for only a short time. The older members of the family may enjoy the more or less prolonged study; and it is well that they should have it. But such a study as this may be conducted after baby has gone to bed. Carefully should baby's emotions be guarded, that there be nothing in family worship to impart to him a sense of dread or distaste at its approach.

Sabbath School. He should not be taken to Sabbath school until such time as he can enter into its spirit and the enjoyment of its kindergarten privileges. Fortunately, in connection with many Sabbath schools the "cradle roll" has been established, where the babies are made happy with helpful pastime leading up to religious lesson.

Lessons of Love, Faith, and Trust. In hearing the grace said at table day by day, in hearing the short prayer that mother says for him, in early lisping his own first prayer, baby becomes conscious of some loving power that is the source of all good. Between the age of two and three, he begins to hear, along with his other stories, stories of Bible lore. He learns that some loving, wonderful being, whom he cannot see but who is really very near, has made the flowers and the birds and the trees for his delight; has made it possible for him to have food and clothes, a home and father and mother, brother and sister; and that this wonderful Being made him, himself. He learns to love, in a baby way, first from impression of tone and voice and word, this wonderful Power that has given him all. There is something in the spirit of these that arouses an answering chord in his own spirit; and as he imitates the expression, his own emotion answers the more. How quickly the babe of even three months responds in facial expression, in answering loving coos, or in the pathetically curled-out lip to mother's face and tone as she talks to him. Just so the tone of reverence and love to God brings out in the older baby an emotion which is akin and which,

though he cannot analyze it, may be developed into the feeling of reverence, which must become such an important part of his spiritual life.

Bible Stories. Baby learns to lisp the word "Jesus," and to say his prayers to Him. And he learns that Jesus has a Father, God, who is above all. He learns the story of the struggle of good and evil as it is told in Bible tales, and he impulsively lines up on the side of good. He learns of God's care for those who trust in Him and of the wonderful deliverances of old—the story of creation, of Adam and Eve, of the tower of Babel, of Daniel in the lions' den, of the Hebrew lads and the fiery furnace; all thrill him with delight, and he begs for them again and again, until the Bible is a familiar book, and its stories he knows by heart.

Surely the Bible must have been written for children, for what more fascinating tales were ever told for the child mind than the stories upon which children's spiritual lives have developed and thrived from time immemorial? What stories fire the child's imagination more than the crossing of the Red Sea, Elisha and the mountains full of angels, Manoah and the angel disappearing in the ascending flame, Jonah and the whale, Christ walking upon the water, Lazarus being raised from the dead, and others innumerable, any of which can be modified to suit even the two-year-old? And what a background for spiritual training and moral tone!

Avoid Straining Powers of Attention. The time comes when a little more is expected of baby than during his first and second year—the time when his growing power of self-control may be called upon to help him to sit a little longer in worship than he might choose to do, because he has learned to obey, because he has learned to inhibit his impulses. The tax, however, should not be too great or the strain too prolonged, for harm has been done him if it be insisted that he do something that he cannot do from pure lack of nervous strength. Good judgment must ever be used, and careful wisdom, that we do not expect more of our child than he can give, and that by our mistakes we do not arouse dislike and antagonism for those things that we are so anxious to have him look upon with reverence and high regard.



GALLOWAY

The child looks to the parent for guidance, love, and strength.

Love of Nature and the Beautiful. Very closely allied with baby's spiritual education is the love of the beautiful, which should be early inculcated in his soul. The love of that which is truly beautiful will always be a safeguard against those things

that are wrong and unbeautiful. Baby's natural love of nature is our earliest basis for this education, and through early communion with nature, baby is led through the path of beauty to the Author of all beauty, nature's God. This love of nature is implanted in the heart of every child. It is the child's birthright. Emerson says, "The lover of nature is he who has retained the spirit of infancy even in manhood." Agassiz says, "Children are born naturalists." Surely this wonderful heritage should be cultivated.

Baby does so love the out of doors, and he revels in its privileges, from sand pile to moon. He delights in a trip to the garden. Wonderful to him are stories about the flowers, the leaves, the butterflies and bees, the birds and their nests, yes, and the bugs and the toads. What a wealth of material is here! and as mother and father study nature with their babies, their own souls are inspired, and their spiritual lives deepened.

Teach baby early to love the beautiful. At sunset time, take him out and point him to the glorious tints of the western sky; say, "Beautiful sky," "Beautiful clouds," "Beautiful sun." Let mother say it with all the feeling of the emotions that it will stir in her own heart. Quickly baby will respond, and it will not be long until he will be calling mother's attention to a wonderful sunset or a beautiful landscape. Show him beautiful pictures—pictures from the old masters, of nature, of home, and of religious story. Keep ever before him the things that you wish to make the greatest impression upon his plastic mind.

Singing. Sing songs to baby, not only the little folk songs and lullabies, sweet as they are, but songs that will give him the best in music and poetry. Sing clearly, distinctly, and soon baby will be singing too, with the spirit and understanding. Children's ears love rime and melody. Says an old Swiss line, "The baby whose mother has not charmed him in his cradle with rime and songs must live his whole life through without enchanting dreams." There is a wonderful opportunity for education in the songs we sing to our children, and little by little, day by day, their lives may thus be enriched and refined.

Poetry. Teach the baby poetry. Learn beautiful poems and

repeat them during the evening bedtime hour. Says one writer, "Much reading aloud of choice poetry throughout the years of childhood, trains to good English and refinement of thought." Let baby's ears be early accustomed to Bible verse, and refinement of soul will result. Baby may not always understand, but he will be soothed and charmed by "the music of your voice." Longfellow said, "How wonderful is the human voice; it is indeed the organ of the human soul. The intellect of man is enthroned visibly upon his forehead and in his eyes, and the heart of man is written upon his countenance; but the soul reveals itself in the voice only, as God revealed Himself to the prophet of old, in the still small voice, and in a voice from the burning bush." Let it be mother's prayer that there may never be anything but beauty connected with the memory of her voice, and let her never forget that baby's spiritual training—that fountainhead of his entire emotional life—must begin in infancy, hand in hand with the physical and mental, that his education may go on in a threefold way until, as a well-rounded individual, he comes to a state of perfect manhood.

"All the birds and bees are singing,
All the lily bells are ringing."

"Merrily swinging on brier and weed,
Near to the nest of his little dame,
Over the mountainside or mead,
Robert of Lincoln is telling his name:
Bob-o'-link, bob-o'-link,
Spink, spank, spink;
Snug and safe is that nest of ours,
Hidden among the summer flowers,
Chee, chee, chee."

—Bryant.

"There is ever a song somewhere, my dear;
There is ever a something sings alway;
There's the song of the lark when the skies are clear,
And the song of the thrush when the skies are gray."

—Riley.

"Who knows the joy a bird knows,
When it goes fleetly?
Who knows the joy a flower knows,
When it blows sweetly?"

ALL ABOUT THE BABY

Bird wing and flower stem,
Break them who would?
Bird wing and flower stem,
Make them who could?"

"To him who in the love of nature holds
Communion with her visible forms, she speaks
A various language; for his gayer hours
She has a voice of gladness, and a smile
And eloquence of beauty; and she glides
Into his darker musings with a mild
And healing sympathy, that steals away
Their sharpness ere he is aware."

---*Bryant.*

"I know not where His islands lift
Their fronded palms in air;
I only know I cannot drift
Beyond His love and care."

- *Whittier.*

"The Lord is my Shepherd; I shall not want.
He maketh me to lie down in green pastures:
He leadeth me beside the still waters."

Psalm 23:1, 2.

"The earth is the Lord's, and the fullness thereof;
The world, and they that dwell therein.
For He hath founded it upon the seas,
And established it upon the floods.
Who shall ascend into the hill of the Lord?
Or who shall stand in His holy place?"

Psalm 24:1-3.

"Lift up your heads, O ye gates;
And be ye lift up, ye everlasting doors;
And the King of glory shall come in."

Psalm 24:7.

Appendix

A Suggestive Outline of Study

SECTION I

CHAPTER 1

As what does every individual begin?

What is the unit of all plant and animal life? About how many cells are there in the mature human body?

Tell anything you can about a cell, and name its parts.

What are the germ cells, and for what purpose are they set apart?

Name the periods of human life.

Select some member of your group to tell in her own words the story of the development of the human body as given in this lesson.



CHAPTER 2

Remember that the germ cells are simply a little handful of original cells, kept apart from the ever-changing specializing body cells, to be used later as seed in the formation of a new human body; just as a farmer might save seed corn or seed potatoes for his next year's planting.

Where is the hereditary material of a cell found? How much of it comes from the father and how much from the mother? Is this true of every body cell as well as of the germ cells?

What are chromosomes? genes? determiners?

What must every germ cell do before it can unite with its mate? What may we call a germ cell thus prepared for mating?

Tell the story of reduction division if you can. If, however, this lesson seems a little difficult, do not let it worry you. You can take just as good care of your baby if you do not understand this lesson perfectly. We cannot, however, help being impressed with the wonder of the plan upon which the process of reproduction is based.



CHAPTER 3

This lesson may seem too difficult for many groups of mothers. But read it carefully, and see if you can answer these questions:

How do the genes always travel—singly or in pairs?

What is a dominant trait? a recessive one?

Could both members of a pair of genes come from the father's side? the mother's side? Do both members of any pair of genes ever get into the same marrying cell? Can you see that either the maternal gene or the paternal gene is lost?

Can you reproduce and explain the diagram on page 30? Can you tell why, in a family where the eyes of one parent are blue and those of the other parent are brown, with one blue-eyed grandparent and one brown-eyed grandparent on each side, the children would have more chances for brown eyes than they would have for blue?

Study carefully Mendel's experiments. Understand them if you can, but do not feel bad if you forget the detail of them just as soon as you have closed the book.

CHAPTER 4

Name some of the things that can be inherited; some that cannot be. A child has a crippled arm because of infantile paralysis. He grows up, marries, and has children. May any of his children be defective because of this condition? Why is it that diseases sometimes seem to be inherited when they are not?

May the germ cells be affected by the condition of the parent's blood? Would you say that a high grade of health in an individual would affect favorably his germ cells?

What four things must be considered in connection with the question of heredity?

SECTION II

CHAPTER 5

What do you feel is the responsibility of any young person toward the child that may in the future be born to him? In what two ways may a young man or a young woman give his or her future child the very best chance? Would these not have to do with his own fitness and with his selection of that child's other parent?

Name some of the things that take toll from germ cells and through them of the offspring they represent.

CHAPTER 6

Discuss the body's ability to adjust itself to unfavorable conditions. Do you think that anyone has ever been as fine and strong as he might

have been? Can you explain why, occasionally, we see a child with a poor chance out-reaching the one with better opportunities? Should not our ideal for our child be to give him the very best possible opportunity, realizing that even then there is still a margin of possibilities not reached?

CHAPTER 7

On what is the developing child dependent? How does nature protect the child?

In what way may the condition of the child be influenced by the mother's blood? How may a mother's nervous condition affect the developing child?

Read carefully what is said about the endocrine glands, referring also to other chapters mentioned.

After studying this lesson, what conclusion do you reach in regard to birthmarks; in regard to "marking a child"?

CHAPTER 8

Why would you say that environment after all is more important than heredity? Is it not because in most cases we can influence environment, and the question of heredity has been decided? Explain how conditions, apparently hereditary, are really the result of environment.

Upon what is the child's spiritual and personality development largely dependent? Must one accept without modification a trait simply because of heredity?

SECTION III

CHAPTER 9

Can you tell what a gland is? a secretion? a lymphatic gland? a ductless gland? What is the effect of the internal secretion of the ovaries and the testes?

What is meant by fertilization? by conception? by pregnancy?

Tell the story of the journey of the ovum from the ovary to the womb in case conception takes place. A woman is pregnant if she has conceived. Conception having taken place, she is in a state of pregnancy. Conception has to do with the successful planting of the fertilized ovum in the uterine wall. Pregnancy is the condition that begins with conception and ends with the birth of the child.

Can you give a reason why menstruation ceases when pregnancy begins?

Can you name some of the natural conditions that might interfere with conception?

Tell the story of the developing babe in the womb in a way that you might like to tell it to your little child. Read also "Beginnings of Life," which may be obtained from the Pacific Press Publishing Association, Mountain View, California.

CHAPTER 10

In what way may we hope to raise the standard of fatherhood? Discuss the responsibility of the father toward his child both before and after birth.

CHAPTER 11

How early and in what ways should training for motherhood begin? If you were the mother of a daughter, how would you plan for your little girl to be prepared physically for future motherhood? intellectually? spiritually?

CHAPTER 12

Discuss page 86, last paragraph. Can you see why the instinct of love for a little child was God-given for the safety of the race? Can you think of anything more akin to the love of God in human experience than this love? Did you ever stop to think that a parental element in the love of a man or woman, each for the other, enriches and safeguards married love, making it more unselfish and more tolerant?

How only can a man and a woman be happy in marriage? If your husband is keenly interested in something, can you see the advantage of your cultivating an interest in that thing? Would it be worth while to find your husband's keenest interest and to link yourself with it in some way? Does your presence suggest to your husband the enumeration of unpleasant facts, or do you plan a host of interesting, pleasant things to tell him when he comes home? Is your husband's home a place of respite—a place where he finds balm for anxious spirit and strength to be true to the best that is within him? Do you get your troubles away in the background and out of your face before he comes home? Is it always the woman that must be the tower of strength? It may seem so; but in this strength lies the salvation of the home, and it pays. The mother instinct in the woman must predominate even in her love for her husband.

Are you being the intellectual and spiritual mate to your husband that will give you both the most of happiness?

SECTION IV

CHAPTER 13

Discuss rest and exercise for the expectant mother.

How can bathing be carried out so that it will accomplish more than simple cleanliness? What precautions should be taken during the last month?

What special treatment can help prepare the mother-to-be for the strain of baby's birth?

Discuss the care of the breasts.

What can you say as to an abdominal supporter?

Why should every expectant mother be under the care of a physician during her pregnancy? What are some of the important things that should be determined from month to month?

CHAPTER 14

Name four important classes of foods from which the expectant mother should select her diet. Outline several adequate breakfasts, dinners, suppers, or lunches. Tell as far as you can why the various foods are important. Outline a very simple diet for a mother who is having digestive disturbances.

What should be done to avoid or to correct constipation?

CHAPTER 15

Outline the simplest plan of clothing for the baby that will be adequate for his needs. Remember that the baby's layette lasts him, probably, the first six months of his life. Is it reasonable to make the outlay for this as little as it can be and still satisfy baby's every need? Estimate the expense of the simplest layette, and compare it with that often incurred in making baby's clothes. What is the advantage of the sleeveless dress? How great is the need for bands? Discuss the sleeping bag, dress-up clothes, bonnets.

CHAPTER 16

Describe the essentials for baby's bed and bedding. Make a list of things that should be prepared for baby's table. To what other use may a well-planned table be put other than just a place for holding baby's things? Mention any other devices that may be planned to help make baby's care easy. Make suggestions from your own experience.

SECTION V

CHAPTER 17

Discuss the advantage of hospital care over home care at the time of baby's arrival.

As nearly as you can, describe the newborn baby. What can you say about his muscular activity? What important precautionary measure should be taken as regards baby's eyes? What can you say about the care of the cord stump? Why is crying good for the new baby?

Discuss the importance of birth registration.

CHAPTER 18

What can you say about the care of baby during the first week of his life? Tell what you can about the navel wound—its care and healing. What are some of the irregularities that may occur in baby's early physical experience? Should anything be done about them?

Can you see why quiet and letting alone are very important in connection with baby's new existence?

What can you say about baby's crying? his being kept warm? his clothes? his bowel movements?

What is colostrum? How much food does baby get for the first two or three days? How should his nursings be planned? What can you say about water drinking? Why is it important that baby be weighed regularly?

CHAPTER 19

Can you see why the family as well as the baby need training during baby's first weeks in his new home?

Discuss the importance of regularity in baby's program.

Name five things that baby needs during the first weeks of his life. What can you say about baby's nursing? What are some of the things to be sure about if baby seems to cry more than you think he should? What is the important thing to do if baby does not gain in weight or seem to do well on his food? Outline carefully a plan for the diet of the nursing mother. Does this differ much if any from that of the pregnant mother?

Answer. In principle it is the same. The nursing mother, however, should probably eat more than the expectant mother. Can you think of any reasons for this? Does it do the baby any good for mother to become overweight during this time?

CHAPTER 20

Make out an ideal program for a baby six weeks to two months old. How would you modify this program for your baby to suit your convenience?

Discuss the exercise time; the baby's bath. Is there any advantage in mother's being bathed in perspiration while she is giving baby his bath? Since baby is covered up most of the time or is in the warm water or has mother's warm hands on his body, is there any danger, do you think, of his catching cold in ordinary room temperature? What is the best time of day for baby to be played with or carried about? Why?

SECTION VI

CHAPTER 21

Is there any such thing as three-month colic? *Answer.* No.

Outline a program for a baby three months old. How do you think this might be varied and still be just as well for baby?

Why do you think the four-hour schedule with five nursings in twenty-four hours is better than more frequent feedings?

How much orange juice should a baby of three months get? Can you see why a bottle-fed baby might need more than a breast-fed baby?

Discuss baby's clothing.

Should baby be expected to be quiet part of the time even though he is not asleep? About how much will he sleep at this age? How may he amuse himself when he is awake?

Discuss baby's development at this age, both mentally and physically.

What can you say about cold baths for baby?

Make a list of don'ts.

CHAPTER 22

Describe the average baby at four months; at five months; at six months.

Plan an ideal program for a baby at each of these ages.

What are some of the interesting things that may happen at about the age of six months?

Discuss baby's feeding.

CHAPTER 23

What is the important thing to do if it is found that baby has to be put on a bottle? Give a list of the questions that will need to be answered before baby's formula can be planned intelligently.

Name the things that usually have to be done to change cow's milk so that it can be properly taken care of by baby's digestion. Name three things that may be done to make cow's milk more digestible. *Answer.* Diluting, removing cream, and boiling. Will this leave sufficient food value? *Answer.* No. Is it necessary ordinarily to remove cream? *Answer.* No. The dilution being necessary, what must be added to bring up the food value? *Answer.* Some form of sugar. What is the advantage in boiling the milk? What is the value of dry milk? Klim and Dryco are examples of dry milk.

Describe the care of bottles. Discuss the giving of orange juice.

It will be well for the class to understand the general principles of milk modification, but of course it is not necessary that every one remember the various formulas given. Those who wish to may use them for reference. Reading them over will help to give a general idea of the plan of simple milk modification.

CHAPTER 24

Name the signs of a healthy baby. Do we need to worry about baby's digestion if he is gaining in weight, if his stools are normal, and he does not vomit? Discuss at length any questions in which you may be particularly interested.

Discuss the training of baby to regular bowel habit.

What is the surest sign that baby is getting enough food?

What do you consider a normal stool?

Discuss the importance of medical and surgical care for mother after baby's birth.

SECTION VII

CHAPTER 25

Discuss again baby's accomplishments at six months.

Explain how to measure baby.

What is the relation of early walking to bowlegs? Discuss creeping and the advantage of a pen.

What can you say about baby's gain in weight after six months? Discuss baby's development from six months to one year.

CHAPTER 26

What change is made in baby's diet during the seventh month, and how are these additional foods prepared? What can you say about teach-

ing baby to eat from a spoon and to drink from a cup? What is the ideal weaning time and the best way to wean baby?

How may the following conditions be corrected: Constipation, overweight?

CHAPTER 27

Outline an ideal program for a seven- or eight-month-old baby.

What special precaution should be taken with a baby of this age?

Do you think a baby of this age should learn to obey? Discuss his first lessons in obedience.

CHAPTER 28

Which is more important in baby's development—tissue building or the forming of fat?

What part of baby's food is it on which his tissue building especially depends? Can you see why an excess of cream and cereal might keep baby from getting enough of more important tissue-building foods?

Explain why a baby, after the age of six months, should ordinarily not have sugar added to his milk.

What special precautionary measure should be taken to keep baby from taking colds and getting respiratory infections? How do almost all the ordinary diseases of childhood begin? Is it possible always at first to differentiate these from ordinary colds? What special measures should be taken to protect baby from smallpox, diphtheria, scarlet fever? Where can such special treatment be obtained?

What may we do with the baby who, because of lack of hearty appetite, does not get enough of fat-forming food?

Discuss teething.

SECTION VIII

CHAPTER 29

What new problems arise when baby is one year old?

Do you think baby should be trained to obey? How?

What special precautions need to be taken that he does not injure himself?

Discuss the use of a pen and of toys at this age. What special hygienic measures should be persisted in during the second year?

Discuss baby's investigative interests after the age of one year. What advantage should be taken of these?

CHAPTER 30

Outline the various physical changes in baby at about the end of the first year and on through the second year.

When does baby begin to talk? How many teeth should baby have at one year? At two years? Describe the average baby at two years of age. Describe the changes taking place during the third year.

CHAPTER 31

What mistakes are parents liable to make in regard to baby's diet at about the end of the first year?

What change should normally take place in baby's diet at about this time? Outline normal diet for a baby during the first part of the second year. During the last part. What things should be avoided? Discuss the harm of adding artificial "trimmings" to baby's food at this age. Name accessory foods that may be added with advantage. Discuss baby's diet during the third year.

CHAPTER 32

Outline an ideal program for baby during the second year.

What can you say of sun baths? of cold water? of clothes?

Make a list of don'ts. Discuss teeth brushing.

What can you say about baby's life during his third year?

SECTION IX

CHAPTER 33

What special item in baby's daily program will insure for him a firm, ruddy skin, indicative of health?

Discuss constipation and how it may be overcome. Which ordinarily is the greater cause for anxiety—constipation or diarrhea? What may diarrhea mean, and in what simple way may it be treated?

What relation may baby's diet have to frequent colds and respiratory infections? Discuss again vaccination and toxin antitoxin. Where may treatment be obtained? Discuss the harm that you may do to the community by permitting your child to have a communicable disease. Name the communicable diseases common to childhood. How may you protect the children of your neighborhood? Is it safe to wait until whooping cough or measles or other like diseases are diagnosed before you begin to keep your child away from other children?

CHAPTER 34

What is the cause of rickets? How does this disease manifest itself? Discuss preventive treatment; curative treatment. Outline a diet that will tend to protect a child from rickets.

CHAPTER 35

What is malnutrition? What are its signs? Name some of its causes. Discuss the important things in its prevention.

What would suggest a beginning malnutrition in baby?

Outline a simple home program for an undernourished child of two years.

CHAPTER 36

How may we protect baby from colds? What can we do about it if baby gets a cold? Discuss special baths when baby has a cold. Of what may an apparent cold be the beginning?

What may be the cause of vomiting or diarrhea? Outline plan of care for such symptoms.

Of what may a convulsion be an indication? Discuss the treatment.

What should be done if baby has a fever?

SECTION X

CHAPTER 37

How important are habits? Discuss the advantage of good habits over bad ones. When is the time to establish right habits? Think of the child as a bit of impressionable clay; how does it illustrate our responsibility in the formation of his habits?

CHAPTER 38

Make a list of good habits, and discuss the best plan of encouraging the formation of such habits in our children.

Discuss plans for the care and training of a child who "won't eat."

CHAPTER 39

Make a list of bad habits. How may such habits be encouraged? How may they be discouraged? Discuss punishment.

CHAPTER 40

How have you broken your baby of sucking his thumb? How would you break him of it? or does he still suck it? Can you see how thumb sucking might interfere with mental development?

Have you any way of knowing whether or not your child will be a difficult case? Is not prevention better than cure?

SECTION XI

CHAPTER 41

Can you name three parts of the working nervous system? How may proper development of baby's nervous system be encouraged? Baby is born with positive impulses; how can we help him to develop proper negative ones? (The negative ones he so often seems to develop are usually not just the right kind!)

Can you see that it is important that baby early learns to use the "brakes" as regards his impulses?

CHAPTER 42

Why do you think that the ordinary child pays so little attention when mother says, "Don't"? Is your child an exception?

Discuss the importance of training a child to use his inhibitory powers. What relation do you think this has to self-control?

What common mistakes do mothers make in this regard? Do you think that books and papers should always be put where baby cannot reach them? Can you see any special reason why the naturally nervous child should early learn lessons of self-control? Will conscious self-control influence his subconscious mind and reflex nerve centers? Which do you think is easier—to enforce obedience to a negative or to a positive command? Why? Illustrate these by actual examples.

What do you think is meant by breaking a child's will? Do you think that there is an advantage in doing this? When you have told your child to do something, what do you think your attitude should be during the interim between the time of your giving the command and his obedience to it?

Do you think there is a place for corporal punishment? When, if ever, should it be given?

Discuss the habit of obedience. Can you see why the don'ts in baby's training need to come earlier than the do's?

Discuss the positive element in baby's training.

CHAPTER 43

Name the important things that affect a child's disposition and personality.

Discuss home atmosphere. What harm may be done by talking about baby in his presence or by making him continually aware that he is the center of attraction?

CHAPTER 44

Enumerate as many things as you can that are certain to produce a spoiled baby. Discuss the opposite of these, with the results.

SECTION XII

CHAPTER 45

What is education? Is it possible entirely to separate physical education from other phases? With what would you say that physical education of the baby has particularly to do? Can we measure the most important results in symptoms or reactions following immediately upon some phase of baby's physical program? Discuss possibilities of physical development during the first three years, as outlined in the program of playwork. Would you consider it a cause for discouragement if these possibilities were not always reached? Refer not only to this program of playwork but also to previous chapters discussing development at certain ages; also to your own experience.

CHAPTER 46

Discuss the earliest stages in the development of sex consciousness in the child. How should these be avoided? Is not an abnormal self-consciousness in the child practically always due to the attitude of his associates—particularly his elders—toward him? Would it not mean much if the child were continually encouraged to look out and away from himself; and may we not consider it normal for a child to be impersonal in all thought of himself? Is there any reason why a child should become more conscious of one part of his body than another? Has he not been sinned against if, through the carelessness of his elders, he develops an abnormal self-consciousness and a sex consciousness that tend to distort his mental attitude and emotional reactions throughout his whole life?

CHAPTER 47

Upon what would you say baby's mental development largely depends?

How may the attitude of mother and father toward the child's inquiring mind help to develop mental ability? What positive steps may be taken to interest a child in those things that tend to develop the mind? How may this be done in a program of playstudy?

Do you think it places any greater tax upon the child's mind to study truth than it does to study untruth? Is not truth just as fascinating as fiction? Are there true stories just as interesting as untrue? May not almost any scientific truth be told in the form of a story; and will not the possibilities of teaching scientific truth to children be limited only by the information of the father and mother themselves?

CHAPTER 48

Upon what is the baby dependent for the development of his spirit? From whom does he get his first spiritual impression and influence? Discuss in this connection the parent's attitude toward the child, the parents' attitude toward each other and toward other members of the family.

How would you say baby's first religious training should be begun? What care should be taken that nothing of a dislike toward religious things be allowed to enter his consciousness? Which is more important as regards baby's spiritual education—excellent home atmosphere or positive command and insistence upon his doing certain things that have a religious significance? Would it be wise ever to develop an antagonism on the child's part in regard to religious things?

What advantage would you say Bible and nature stories have over fairy tales? Discuss the love of the beautiful. How may this be encouraged in the baby? Is there a beauty in nature, in poetry, song, and music that will appeal to the baby and arouse within him a spiritual response even though he cannot understand? Babies love rhythm—may not this be utilized to arouse in them a response to the beautiful in literature as well as to the meaningless jingles with which their emotions are so continually regaled? Select and learn some lines that you think would make beautiful music for baby's ears and render help in the development of his spirit even though he were not always able entirely to understand.

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